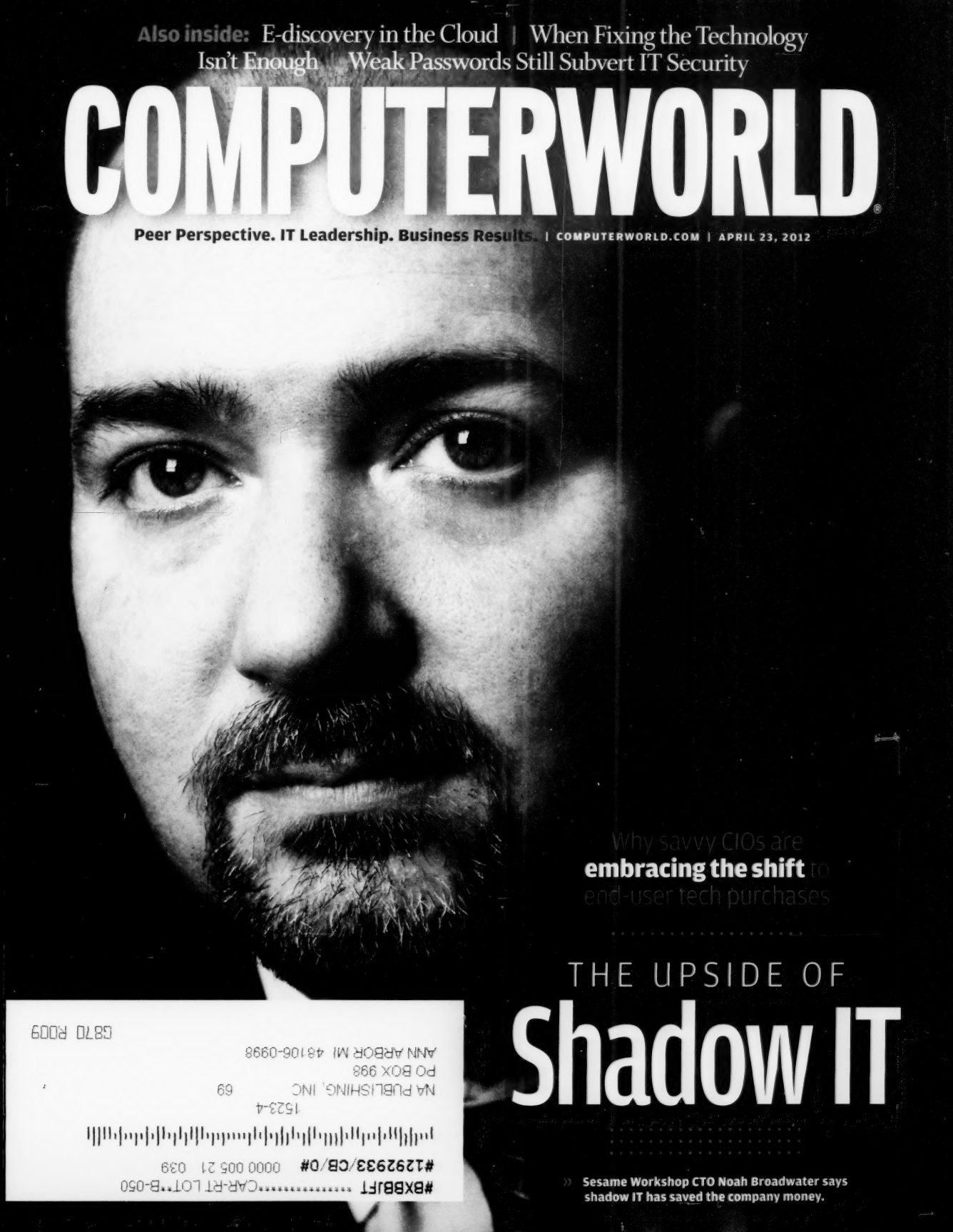
Also inside: E-discovery in the Cloud | When Fixing the Technology Isn't Enough | Weak Passwords Still Subvert IT Security

COMPUTERWORLD

Peer Perspective. IT Leadership. Business Results. | COMPUTERWORLD.COM | APRIL 23, 2012



Why savvy CIOs are **embracing the shift** to end-user tech purchases

THE UPSIDE OF Shadow IT

» Sesame Workshop CTO Noah Broadwater says shadow IT has saved the company money.

G870 R009

ANN ARBOR MI 48106-0998
PO BOX 998
NA PUBLISHING, INC 69
1523-4

#1292933/CB/0# 0000 005 21 039
#BXBBJFT ********CAR-RT LOT**B-050

Smarter technology for a Smarter Planet:

The cloud that's transforming an industry, one fish at a time.

At the University of Bari, a new computing model is creating new business models. Using an IBM SmartCloud,™ their team built a solution that allows local fishermen to auction their catch while still at sea. By creating more demand for the fishermen's product, the cloud has increased income by 25% while reducing time to market by 70%. Now the team is scaling the solution to create new business models for the winemaking and transportation industries. What can cloud do for your business? A smarter planet is built on smarter software, systems and services.

Let's build a smarter planet. ibm.com/cloudsolutions

IBM

IBM, the IBM logo, ibm.com, Let's Build a Smarter Planet, Smarter Planet and the planet icon are trademarks of International Business Machines Corp, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at www.ibm.com/legal/copytrade.shtml. © International Business Machines Corporation 2012.

COMPUTERWORLD

P.O. Box 9171
492 Old Connecticut Path
Framingham, MA 01701-9171
(508) 879-0700
Computerworld.com

» EDITORIAL

Editor in Chief
Scot Finnie

Executive Editor
Julia King (events)

Managing Editors
Johanna Ambrosio (technologies), Ellen Fanning (features), Sharon Machlis (online), Ken Mingis (news), Bob Rawson (production)

Assistant Managing Editor
Valerie Potter (features)

Director of Blogs
Joyce Carpenter

Art Director
April Montgomery

Features Editors
Barbara Krasnoff (reviews), Tracy Mayor

News Editors
Mike Bucken, Marian Prokop

National Correspondents
Julia King, Robert L. Mitchell

Reporters
Sharon Gaudin, Matt Hamblen, Gregg Keizer, Lucas Mearian, Patrick Thibodeau, Jaikumar Vijayan

Copy Editor
Christina Collins

Editorial Project Manager
Mari Keefe

Senior Associate Online Editor
Ken Gagné

Office Manager
Linda Gorgone

Contributing Editors
Jamie Eckle, Preston Gralla, JR Raphael

» CONTACTS

Phone numbers, email addresses and reporters' beats are available online at *Computerworld.com* (see Contacts link at the bottom of the home page).

Letters to the Editor
Send to letters@computerworld.com. Include an address and phone number for immediate verification. Letters will be edited for brevity and clarity.

News tips
newstips@computerworld.com

Subscriptions and back issues
(888) 559-7327, cw@omeda.com

Reprints/permissions
The YGS Group, (800) 290-5460, ext. 100, computerworld@theygsgroup.com

24 E-DISCOVERY IN THE CLOUD

COVER STORY

The Upside of Shadow IT

18 Tech-savvy employees have long bypassed IT to get their hands on hot technologies. Rather than standing in the way, smart CIOs are now embracing and even encouraging shadow IT. Here's why.

E-discovery in the Cloud

24 Don't wait until the lawyers come calling to figure out if you can find your cloud-based data.

Help for the Help Desk

30 Organizations are working to improve the help desk by finding "teaching moments" for users and focusing on efficiency.

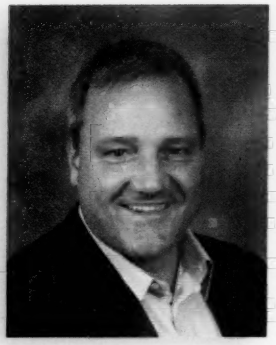
HEADS UP | **4** **HP CEO Meg Whitman** insists she's not going anywhere, despite opportunities in politics. | An **e-voting system** in Florida misreports election results. | **6** **Windows XP** has two years left to live, says Microsoft. | **Undergrad enrollments** in computer science continue to grow.

NEWS ANALYSIS | **8** Recent data breaches show that **weak passwords** are still a problem. | **10** The **IT skills gap** forces CIOs to get creative.

OPINIONS | **16** **Paul Glen** says techies have to (gasp!) deal with users' feelings while fixing computers. | **35** **Steven J. Vaughan-Nichols** is already pegging Facebook's Instagram acquisition as a big flop. | **40** **Scot Finnie** doubts that Microsoft's tablet-centric bet on Windows 8 will pay off.

DEPARTMENTS | **12** **The Grill:** SuperValu CIO Wayne Shurts | **34** **Security Manager's Journal:** Several employees' email inboxes are open to anyone in the company. What happened? | **36** **Career Watch** | **39** **Shark Tank**

BLEND IMAGES / FOTOLIA



Dave Stevens
CHIEF TECHNOLOGY OFFICER AND VICE PRESIDENT, BROCADE

Dave Stevens is instrumental in driving Brocade's technology strategy, key business initiatives, mergers and acquisitions, and Brocade's investment portfolio as it expands its role in the evolving networking market.

FOR MORE INFORMATION:
Download the Forrester Technology Adoption Profile, Unlocking the Potential of Server Virtualization with Network Automation at: www.cio.com/whitepapers/brocade

Visit Brocade.com/everywhere

BROCADE

COMPUTERWORLD
Custom Solutions Group

IT Transformation:
Virtualizing the Enterprise

IT transformation is underway. Brocade CTO Dave Stevens explains this important shift and what it means to networks.

Can you describe the movement toward virtualizing the enterprise?
There is a major IT transformation underway, which is perhaps the biggest shift in the IT space that we've seen since the adoption of the Internet. It's driven by a number of external trends, such as the number of devices that are plugged into the network—by some estimates there will be more than 25 billion devices out there in the next few years. And at the other end of the connection, organizations are continuing to build big data centers as the cost of storage and processing capacity goes down and data center networks become more capable, higher performing, and less costly. Between those two end points you have to connect over the wide area; and over the years, those connections are becoming less expensive and massively more capable. So now you have an environment where enterprises are taking advantage of new infrastructures and leveraging the technology and applications needed to support an organization that is distributed over wide distances. Customers are going to use a combination of internal and external applications—the latter coming from cloud services, and they're combining those internal and external resources into a modern IT catalog that can support all users.

What are the characteristics of the virtual enterprise network?
The network needs to be able to run over distances, be more dynamic, and it must emphasize non-stop operations. If you have your entire organization based on applications that are running across the network infrastructure, there really isn't a good time to bring the network down for maintenance. Also, applications must be optimized to run on the network infrastructure. For example, with virtualization, the internal and external network must be optimized to support the movement of virtual machines inside and between data centers. These changes have to be made incrementally, so that customers don't have to throw out network investments they've made in the last 20 years. We need to use new technology and processes, but also leverage assets that exist today.

How are networks changing to support these new requirements?
Inside the data center there's a big transition going on with the adoption of modular applications, like virtualization, where the hierarchical structure of the traditional data center doesn't operate very well. So there's a movement in the industry toward faster, flatter networks inside the data center, such as Ethernet fabrics. In the broader carrier networks, infrastructure is being built to support the high growth in traffic patterns, so the network has to have much higher performance and lower cost to fit this new model. And at the enterprise network level, these networks must be designed to be very resilient, automated, and cheaper to operate.

What business benefits can companies expect to gain from virtualizing the enterprise?
There are many: greater productivity, faster time to market, faster implementation of new applications, lower costs, and the ability to create a strategic advantage over the competition by using an array of information that can only be gained by amalgamating information from both local and remote resources. The network is really the glue that ties all these services and computing infrastructures together. ■

Brocade delivers cloud-optimized networks for today and tomorrow.

Virtualization and on-demand services have changed both the way business works and the way your network needs to respond. Brocade is leading this transformation with cloud-optimized networks that dramatically simplify infrastructure, increase efficiency, and provide scalability so you can deliver applications, services, virtualized desktops, and soon even entire data centers anywhere on your network. The future is built in. Learn why 90 percent of the Global 1000 and two-thirds of the world's Internet exchanges rely on Brocade at **brocade.com/everywhere**

© 2012 Brocade Communications Systems, Inc. All Rights Reserved.

BROCADE

Fresh Insights
New Trends
Great Ideas

HeadsUp

Meg Whitman says her experience in politics left her better able to handle tough challenges in the business world.

DAVID MCNEW / REUTERS

IT MANAGEMENT

Whitman Plans to 'Stay the Course' at HP

DESPITE HER longstanding ties to presidential contender Mitt Romney, Hewlett-Packard CEO Meg Whitman assured a recent audience that she plans to stick it out with the company for the immediate future.

Whitman's recent losing try for the California governor's office was "the most difficult thing I have ever done. It was tremendously humbling," she told the Simmons Leadership Conference on April 5. After experiencing the rough-and-tumble world of politics, the mixed reaction to her appointment as HP's CEO last September was easy to take, she said.

Thanks to the time she spent in politics, "tough questions don't throw me off my game," Whitman said.

She added that she plans to stay at HP for the long term, no matter what the political arena might bring. Romney was Whitman's boss at Bain & Co. early in her career, and he could conceivably ask her to join his administration should he win in November.

"HP needs consistency more than anything else," she said to spontaneous applause from a large group of HP employees seated together in the audience. "I must stay the course."

As Whitman moves the company forward, she maintains a belief in the importance of setting strategy.

"Strategy is about the art of exclusion, deciding what you're not going to do," she said. "And finally, if something isn't working, then you've got to do something different. The cost of inaction is far greater than the cost of making a mistake."

– Elizabeth Heichler, IDG News Service

GET BREAKING NEWS AT
COMPUTERWORLD.COM

E-VOTING

E-voting System Declares Wrong Winners in Fla.

An optical-scan vote-tallying system, now used by some 300 U.S. municipalities, misreported the results of a municipal election in Palm Beach County, Fla., last month.

Dominion Voting's Sequoia Voting Systems device mistakenly awarded two Wellington Village Council seats to candidates who were found in a post-election audit to have lost their races.

The results were officially changed after a court-sanctioned manual recount of the votes.

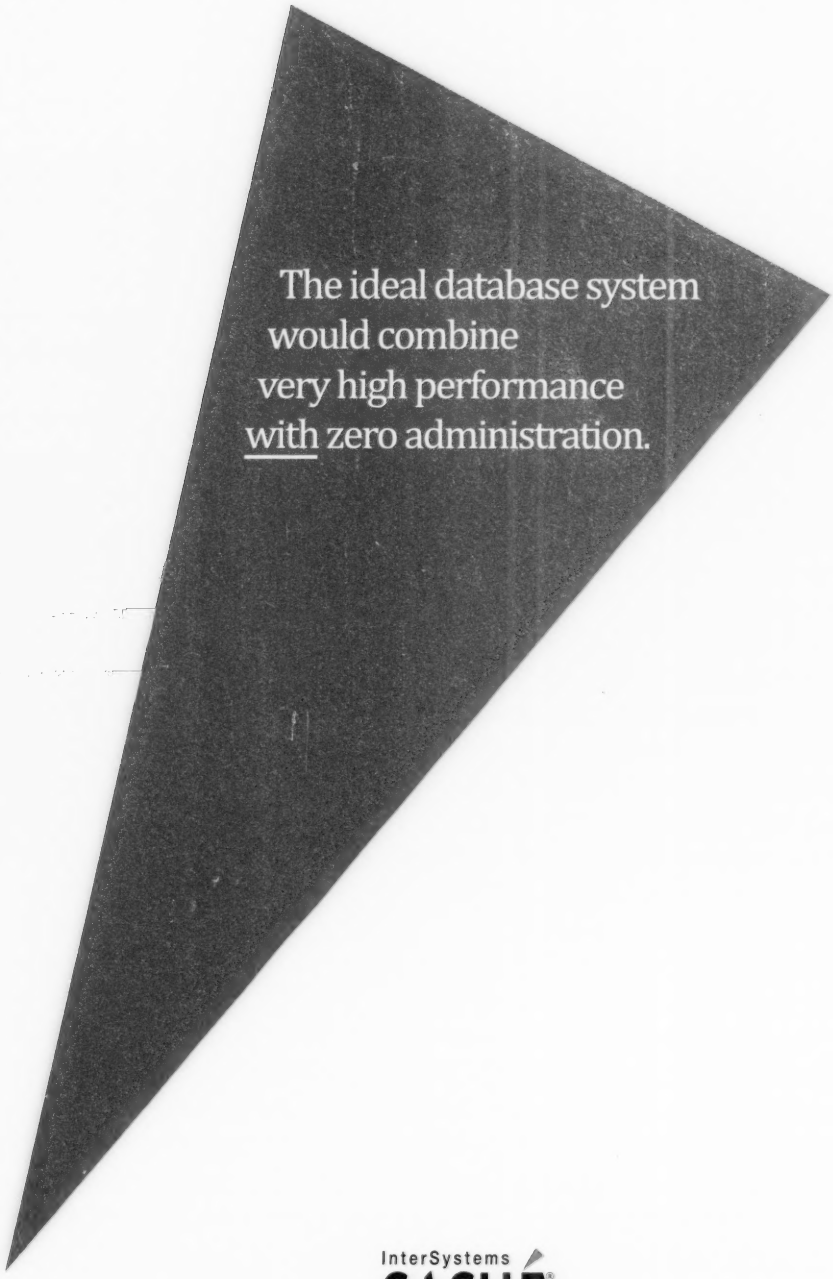
According to a story in Palm Beach's *Sun Sentinel*, the Sequoia vote-counting software was set up in a way that did not correspond to the setup of the Wellington County paper ballot given to voters.

As a result, the newspaper said, "Election-night totals on Wellington's three races were shifted in a circle – with village council Seat 4 votes going to the mayor's race, votes for mayor going to council Seat 1, and votes for Seat 1 going to Seat 4," said the *Sun Sentinel* story.

In a product advisory notice, Dominion had warned that problems could arise if a paper ballot does not match the list of contests that is programmed into the machine.

According to Dan McCrea, president of the Florida Voters Association, the incident highlights the crucial need for "statistically significant" post-election audits.

– JAIKUMAR VIJAYAN

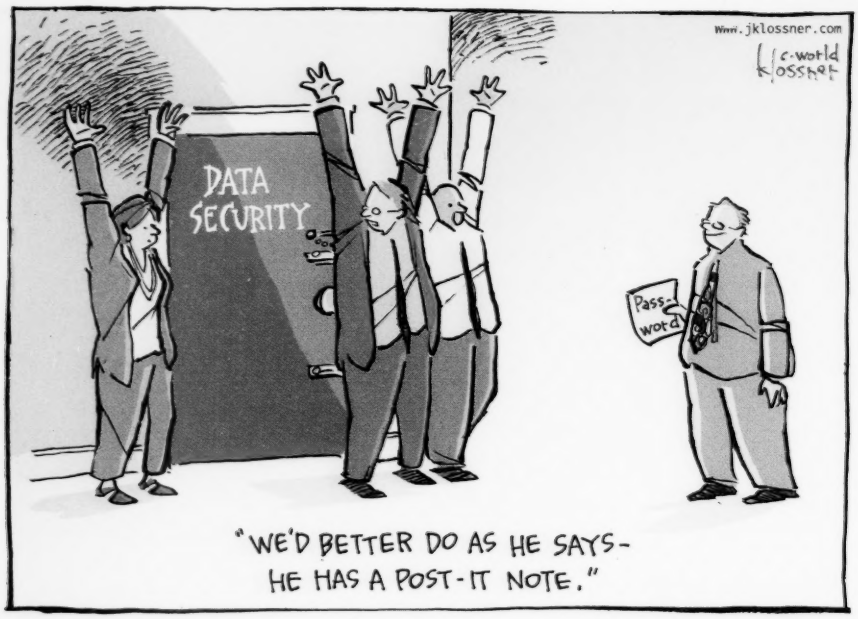


InterSystems
CACHÉ®

Download or request a free, fully functional, non-expiring trial version at **InterSystems.com/Ideal2A**

© 2012 InterSystems Corporation. All rights reserved. InterSystems Caché is a registered trademark of InterSystems Corporation. 4-12 CacheIdeal2CoWo

BETWEEN THE LINES
By John Klossner



OPERATING SYSTEMS

Microsoft to Pull Plug on XP in Two Years

MICROSOFT HAS KICKED OFF what it calls a "two-year countdown" to the death of Windows XP and the Office 2003 productivity suite.

Separately, Microsoft announced that Windows Vista, the problem-plagued operating system that never really took hold among customers, exited mainstream support on April 10. In a product's extended support phase, Microsoft provides security patches to registered users but offers other fixes, including reliability and stability updates, only to organizations that have support contracts with the company.

Windows XP and Office 2003 will no longer be supported as of April 8, 2014, a company spokeswoman said in a recent blog post. On that date, Microsoft will stop shipping security updates for both products.

At that point, XP will have become Microsoft's longest-lived operating system. The company will have maintained the software for 12 years and five months — or about two and a half years longer than it usually supports an OS. It supported the previous record-holder, Windows NT, for 11 years and five months.

Both XP and Office 2003 have been hugely successful. XP went on sale in October 2001, and Office 2003 launched in October 2003. "Windows XP and Office 2003 were great software releases, but the technology environment has shifted," said Stella Chernyak, a Microsoft marketing director.

Some customers will continue to run XP even after it is retired. About 16% of organizations "say they will have more than 5% of their users still on XP even after support ends," according to Gartner analyst Michael Silver, citing a survey his firm conducted in October 2011.

Not surprisingly, Microsoft wants users to upgrade to Windows 7 now. "If your organization has not started the migration to a modern PC, you are late," the company said, referring to data that indicates that enterprise OS migrations take 18 to 32 months.

– *Gregg Keizer*

Micro Burst

Microsoft has agreed to pay AOL

$1 billion

for 800 undisclosed technology patents.

IT EDUCATION

CS Enrollments On the Rise, Up 10% in 2011-12

Interest in computer science continues to grow among undergraduates, according to a survey conducted by the Computing Research Association (CRA). The number of students pursuing computer science majors rose nearly 10% in the 2011-2012 academic year, marking the fourth straight year of increases.

The numbers might have been higher had it not been for enrollment caps that some schools set because they don't have enough faculty members, equipment or classrooms to meet demand, said the CRA.

"We don't have a way to gauge how many students wanted to be admitted," said Peter Harsha, the CRA's director of government affairs. The association reported a 10% enrollment gain last year as well.

This trend is in sharp contrast to the state of affairs after the dot-com bubble burst in 2001. As dot-com fever built, so did enrollments in computer science programs at Ph.D.-granting institutions, the only schools that the CRA surveys. Average enrollments had risen to 400 computer science students at the height of the bubble; by 2006-2007, that figure had fallen to around 200.

Today's enrollments average is around 300 students per program, the CRA said.

– PATRICK THIBODEAU

Smarter technology for a Smarter Planet:

How 3.8 million tailored messages made sales numbers look fantastic, too.

Japanese fashion retailer Start Today took an IBM smarter commerce approach to their business, helping increase annual sales on their Zozotown Web site by 54.2%. Their customer-centric focus uses Netezza® and Unica® to rapidly analyze massive amounts of data, letting them create personalized messages for each of their 3.8 million customers. Results? The solution helped increase the e-mail open rate by five times and the conversion rate by nearly 1,000%. Smarter commerce is built on smarter software, systems and services.

Let's build a smarter planet. ibm.com/personalize

IBM

IBM, the IBM logo, ibm.com, Netezza, Unica, Let's Build a Smarter Planet, Smarter Planet and the planet icon are trademarks of International Business Machines Corp, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at www.ibm.com/legal/copytrade.shtml. © International Business Machines Corporation 2011

Weak Passwords Still Subvert IT Security

Despite years of warnings, analysts say enterprises continue to be plagued by 'the curse of the reusable password.' By Jaikumar Vijayan

A **RECENT DATA BREACH** that exposed the Social Security numbers of more than 280,000 people served as yet another reminder of the well-recognized, but often discounted, risks associated with using weak and default passwords.

In the breach of the Medicaid server at the Utah Department of Health late last month, the hackers — believed to be from Eastern Europe — exploited a configuration error at the authentication layer of the server hosting the compromised data, according to Utah IT officials.

Many security analysts see that formal explanation as a somewhat euphemistic admission that the breached server was using a default administrative password or an easily guessable one, thereby allowing the attackers to bypass the perimeter-, network- and application-level security controls built to protect the agency's systems.

While such mistakes are easy to avoid, they're surprisingly common despite years of warnings about the dangers of using passwords that hackers can easily guess.

For example, the U.S. Department of Energy said a security audit at the Bonneville Power Administration, an agency that provides some 30% of the wholesale power to utilities in the Pacific Northwest, identified 11 servers configured with easily guessable passwords.

Four of those servers allowed remote users to access and modify shared files. Another server, which hosted an administrator account, was protected only with a default password, according to the report released late last month.

Meanwhile, Gartner analysts believe that hackers exploited weak authentication mechanisms earlier this month in a breach at payment processing company Global Payments that exposed credit- and debit-card data of about 1.5 million people. And it's believed that compromised administrator accounts were the target of hackers who perpetrated attacks on the U.S. Chamber of Commerce and open-source WineHQ databases last year.

Moreover, Verizon's latest annual report on worldwide data breaches concluded that attacks exploiting weak passwords are still especially endemic in the retail and hospitality industries. The Verizon report said learning the passwords used to access such sites requires "little in-depth knowledge or creativity."

Gartner analyst John Pescatore said the Anonymous hacking collective takes advantage of the very human tendency to use the same password for multiple accounts.

"A lot of Anonymous' recent success has been in attacks where they have obtained users' passwords to external services and then found the same passwords in use at sensitive internal applications or in email systems," Pescatore said. That is "the curse of the reusable password," he added.

"The truth is, anyone trying to protect nontrivial assets should be using multifactor authentication and/or complementary controls to protect themselves," said Peter Lindstrom, an analyst with Spire Security. "The password has too many weaknesses, including the obvious human ones."

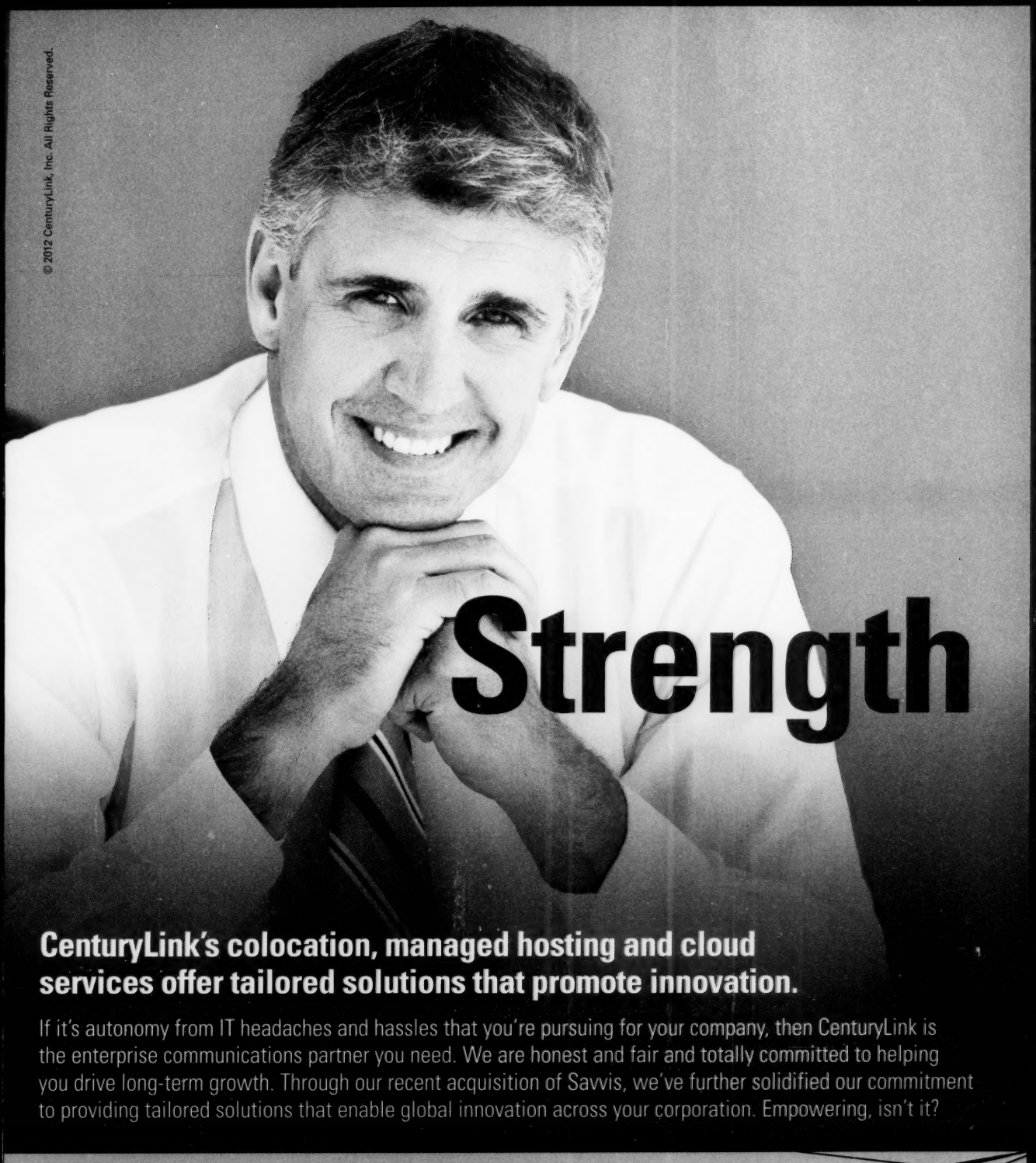
Most password schemes that aren't protected by another form of authentication or lockout controls are susceptible to brute-force attacks, in which automated tools are used to guess passwords, said Lindstrom.

"At this stage of the IT game," he added, "there is really no excuse for using default passwords." ◆

John Ribeiro *of the IDG News Service contributed to this story.*

> "At this stage of the IT game, **there is really no excuse** for using default passwords."
>
> ANALYST, SPIRE SECURITY

ISTOCK / ZMEEL PHOTOGRAPHY



CenturyLink's colocation, managed hosting and cloud services offer tailored solutions that promote innovation.

If it's autonomy from IT headaches and hassles that you're pursuing for your company, then CenturyLink is the enterprise communications partner you need. We are honest and fair and totally committed to helping you drive long-term growth. Through our recent acquisition of Savvis, we've further solidified our commitment to providing tailored solutions that enable global innovation across your corporation. Empowering, isn't it?

Data | Voice | Managed Services | Cloud

CenturyLink

centurylink.com/business

Your link to what's next™

NEWS ANALYSIS

IT Skills Gap Forces CIOs to Get Creative

Employers are offering innovative training programs to help IT staffers master the skills they need in today's evolving market. By Lucas Mearian

FINDING IT WORKERS who are well versed in ever-changing technologies like wireless networking, cloud computing, mobile security and big data analytics is becoming increasingly difficult for CIOs.

To make up for the lack of expertise in such areas, IT managers are looking for job seekers trained in multiple disciplines, and they're implementing cross-training programs for the workers they have.

At *Computerworld*'s SNW Spring 2012 conference in Dallas earlier this month, several IT executives described steps they're taking to hire multiskilled workers and to break down silos of specialization within IT's ranks.

"I need people who have two or three areas of expertise," said David Richter, vice president of infrastructure solutions at Kimberly-Clark. "I need a broader bench. [We] are focused on training people to make them more competent in their current role — and their next role."

The Irving, Texas-based paper products maker cross-trains IT staffers by rotating people into new roles for six-month periods, Richter said. Kimberly-Clark has also cut the number of IT job descriptions from more than 350 to about 40, many of which require multiple skills, he added.

At Cook Children's Health Care System in Fort Worth, Texas, the IT staff has doubled over the past three years or so, but CIO Theresa Meadows said she still needs to expand employees' skill sets, particularly in the areas of security and analytics. She noted that the healthcare provider must comply with ever-changing regulations enacted to ensure the security of patient information, and it's under pressure to embrace big data analytics tools that can parse medical information so it's more useful to physicians, nurses and medical technicians.

To help people master new skills, the healthcare provider launched a so-called "pod" training program that groups three IT employees — a veteran, a midterm worker and a new hire, each with expertise in different areas — on a team so they can learn from one another, said Meadows.

One team has "one Citrix admin who was really our only skilled administrator who is now training the other two," she said. For their part, the other two are training the Citrix admin on "newer skills just coming into our organization," she added.

The pod concept is particularly useful for employees who have received technical training but don't have hands-on experience. Learning from senior colleagues helps them become comfortable more quickly, she said.

At United Orthopedic Group, a Carlsbad, Calif.-based maker of non-invasive orthopedic rehabilitation products, IT workers must be multiskilled because the staff is small. Among other things, CIO James Clent is training his employees to better communicate with their colleagues on the business side.

"I see my technicians talking to a customer and the customer's eyes glaze over," Clent said. "They need to be able to get their message across. Communication is the No. 1 thing to make IT and the business successful."

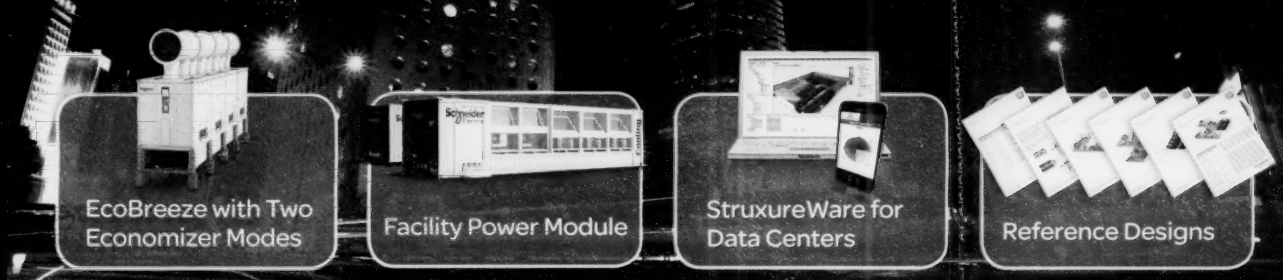
The company also offers online instruction on financial analysis, project management and decision-making, allowing IT workers to learn on their own time or during work breaks.

Clent noted that the program is cost-effective even though the training could make employees attractive to other employers: "It's an investment I'm willing to make because it delivers so much value to the company." ◆

> "[We] are focused on training people to make them **more competent in their current role – and their next role.**
>
> VICE PRESIDENT OF INFRASTRUCTURE SOLUTIONS, KIMBERLY-CLARK

ISTOCK / LISE GAGNÉ

We drive data center innovations.



Our physical infrastructure with full-visibility management software enables responsive, energy-efficient data centers.

Rack-to-row-to-room-to-building architecture lowers cost.

Improving both efficiency and system uptime requires a second look at today's data centers! Featuring innovative and industry-leading physical infrastructure components, Schneider Electric™ data centers uniquely span traditional IT "white space" and facilities to improve interoperability, deliver true data center agility, and achieve cost-saving energy and operational efficiency. Our integrated architecture also lowers total cost of ownership, enables fast and easy design and deployment, and promises the highest availability.

It comprises best-of-breed components available from a single source and through a global supply and services chain. From our well-known APC™ InRow™ cooling units, to our innovative EcoBreeze™ facility cooling module with two economizer modes, to our unparalleled data center management software StruxureWare™ for Data Centers, Schneider Electric products can be found literally in every data center domain.

We offer the most energy-efficient components — all uniquely engineered as a system. In the long run, the Schneider Electric rack-to-row-to-room-to-building approach reduces total data center life cycle cost up to 13 percent and 30 percent of data center physical infrastructure cost over 10 years! In fact, it's the foundation of our Business-wise, Future-driven™ data centers.

APC™ by Schneider Electric

SQUARE D by Schneider Electric

> EcoBreeze with Two Economizer Modes
Only the scalable EcoBreeze automatically switches between air-to-air heat exchange and indirect evaporative cooling to maximize conditions year-round.

> Data Center Facility Power Module
Our modular, step-and-repeat approach to facility power lets you expand capacity in 500 kW increments as needed, cutting OpEx by up to 35 percent and CapEx from 10 to 20 percent.

> StruxureWare for Data Centers
With building-to-server visibility, StruxureWare for Data Centers enables you to make informed decisions about your physical infrastructure.

> Reference Designs
Our standardized architectures for various data center configurations, from 200 kW to 20 MW, reduce time, cost, complexity, and system risk.

> Data Center Life Cycle Services
Including energy management services, professional services from planning, build/retrofit, and operations help ensure highest system availability and efficiency.

Business-wise, Future-driven.

Is your data center efficient? Download our White Paper Efficiency Kit and register to win Apple TV®.

Visit: www.SEreply.com Key Code: n673v
or Call: 888-289-2722 x6392

Schneider Electric

©2012 Schneider Electric. All Rights Reserved. Schneider Electric, APC, InRow, EcoBreeze, StruxureWare, and Business-wise, Future-driven are trademarks owned by Schneider Electric Industries SAS or its affiliated companies. All other trademarks are property of their respective owners. • 998-6650_GMA-US • 132 Fairgrounds Road, West Kingston,RI 02892 • Tel. 800-890-4272

THE Grill

Wayne Shurts

This retail CIO touts the business benefits of boosting IT's speed and agility.

What's your favorite technology? I love what's going on in mobility. It's bringing technology everywhere we go. We have higher-powered computers in our pockets, and we're just beginning to understand the opportunities for how we use that technology. It's revolutionary.

What do you do in your spare time? A lot of motorboating, Jet Skiing and water sports.

What's the best piece of advice you've ever gotten? Be concerned about the total organization, not your function. Always have that in mind.

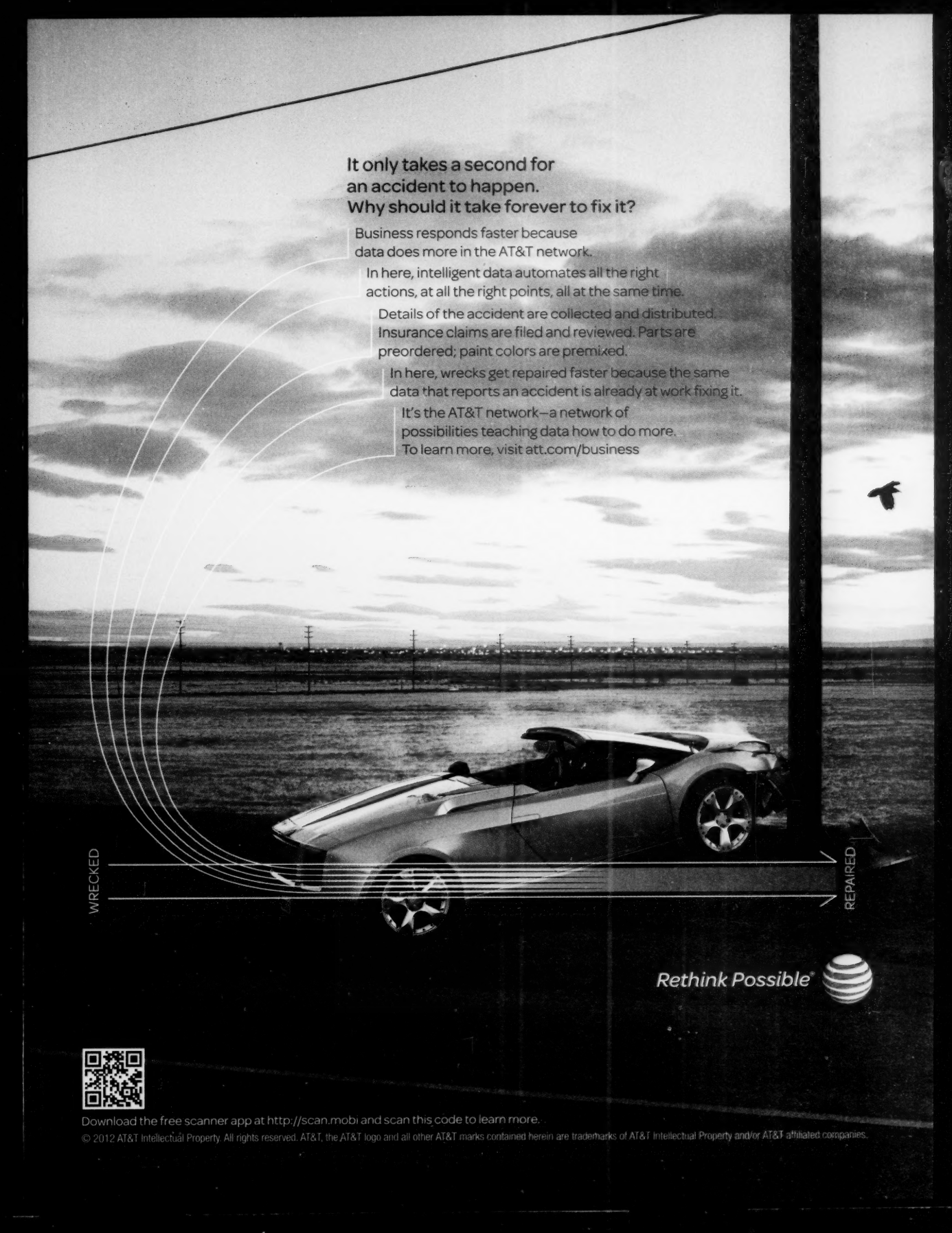
What's the best piece of advice you've ever given? If you want to move to the next job, start doing it today.

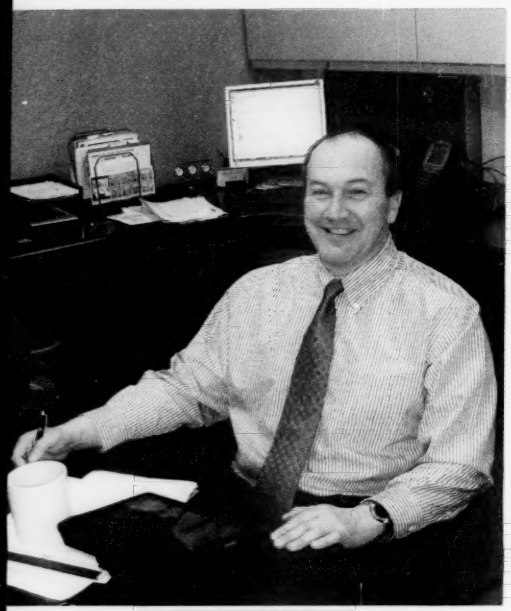
PHOTOS BY MICHAEL SIEMIENAS

IN APRIL 2010, *when Wayne Shurts stepped into the role of executive vice president and CIO at SuperValu, a U.S. grocery retailer and distributor whose brands include the Albertsons and Shaw's/Star Market chains, he brought skills he had honed as an IT executive at Cadbury, as well as two decades of experience in finance, marketing and sales at Nabisco. Shurts, who has an MBA in marketing from Seton Hall University, also spent several years as head of his own consulting firm, which specialized in transformational technology strategies. He's now working to help the IT department at SuperValu better support the company's overall business.*

You recently deployed Yammer to support collaboration. How did that come about? Our CEO, Craig Herkert, was the champion. Craig attended a Microsoft CEO summit in the fall of 2010, and concurrent with that we had been using Yammer's public free site; some grass-roots people got it started. Craig is very much a technology-focused CEO. He has

Continued on page 14


It only takes a second for
an accident to happen.
Why should it take forever to fix it?
Business responds faster because
data does more in the AT&T network.
In here, intelligent data automates all the right
actions, at all the right points, all at the same time.
Details of the accident are collected and distributed.
Insurance claims are filed and reviewed. Parts are
preordered; paint colors are premixed.
In here, wrecks get repaired faster because the same
data that reports an accident is already at work fixing it.
It's the AT&T network—a network of
possibilities teaching data how to do more.
To learn more, visit att.com/business
WRECKED
REPAIRED
Rethink Possible
Download the free scanner app at http://scan.mobi and scan this code to learn more.
© 2012 AT&T Intellectual Property. All rights reserved. AT&T, the AT&T logo and all other AT&T marks contained herein are trademarks of AT&T Intellectual Property and/or AT&T affiliated companies.



Continued from page 12

kids, so he understands the power of social media, and he came back on fire for what social media could do for Super-Valu. In nine months' time, the audience grew from a handful of people to more than 8,000 folks. It's really taken off, and it's done all those things that Craig envisioned.

Tell me about some of your other key deployments and how they're improving business performance? One key thing that's about a year old now is the promotion analysis tool. It allows our managers to use analytics to model the effect of what a certain promotion will yield, to see what will deliver the best performance and margins. It's a pretty sophisticated tool that has really allowed us to get tens, if not hundreds, of millions of dollars out of it. That promotion tool has been a significant win for our merchants. They're doing a lot more models about what's the best promotion to run at this time of year, what prices to cut.

> **"You absolutely have to start with speed in mind,** and move from designing systems in conference rooms to working on the store floor or the warehouse floor.

How do you ensure IT develops and deploys the right tools to bring business value? It's looking at what the business is trying to accomplish and how we can enable that. That's how the promotion tool was born. Our agenda starts with direct conversations with the merchandisers, the marketing folks, the retail folks. We call it "intensely business-focused IT." We've also organized IT the way the business is organized. We've embedded IT people in the business. We're trying to do IT from the business up. My direct reports report to me, but they also have a strong dotted line to their [business area] executive vice presidents.

How do you balance IT costs against the need to innovate and move forward while keeping up with maintenance in an industry known for thin profit margins? We have a multiyear ongoing cost savings initiative going on here in IT. We're looking for cost savings, looking for ways to do what we do today cheaper. The good news is technology gets cheaper over time. And new technology, like the cloud, when you deploy it right, can be done the same or better or cheaper. And with this intensely business-focused IT, we use technology in a way that can get the job done in a cost-effective way.

How do you define agility within an IT organization? I would define it as speed, and it's something that IT traditionally hasn't been good at — bringing about quick solutions in a quick time frame. How can we work with the business and turn around new capabilities, functions, systems in a very fast time frame? I'm talking about three weeks or three months — not 18 months or three years, like IT normally works. Agility requires a new way of thinking and working, both for IT and business. You absolutely have to start with speed in mind, and move from designing systems in conference rooms to working on the store floor or the warehouse floor, working directly with the end users, rapidly developing prototypes, iterating, finding out what works and just developing in a completely different fashion, testing as you go.

How do you balance agility with other requirements — such as guaranteeing that systems do what they're supposed to do, security needs, usability and so on? There are two things that we found, two approaches we're taking. We set folks off to begin doing the prototype and iterations with the business, have them start using it, changing it days later. That's a very agile, interactive process. We end up with something we're using and that's solving a problem, and that's great. But you might look at that product at the end of the day and say, "It's wonderful, we got it done fast," but it's not really scalable to 4,000 stores. So we bring in folks who look at it and say, "How do we make it industrial strength?"

The other thing we've found is that speed and quality are complementary. By working with the business to develop an application, we get a much greater quality application because it's grown up through real-life use, [not] where we sit in the conference room and envision the way it should work and develop it over a long period of time.

If the lines continue to blur in the future, will the CIO role become obsolete? There will always be a need for a CIO or a role like that. I actually think the lines are blurring because technology is becoming more ubiquitous, but we still need an enterprise view to bring things together.

– *Interview by* Computerworld *contributing writer*
Mary K. Pratt *(marykpratt@verizon.net)*

Microsoft

BUILT FOR THE FUTURE.
READY NOW.

Microsoft Private Cloud Solutions

In the future, your datacenter will need to be a profit center.
Go with a private cloud solution that doesn't charge per VM.
Learn more at **Microsoft.com/readynow**

Windows Server | Microsoft System Center

PAUL GLEN

Fixing the Technology Isn't Always Enough

Relax; you don't have to be Dr. Phil to address users' feelings.

EVERY IT PERSON has had one of these situations. A user comes to you with a problem. You fix it and announce, "Problem solved" or "Case closed." But you're met with a long, uncomfortable silence or a blank stare. It's an awkward moment that you can end only by saying something like, "Well, let me know if there's anything else I can do for you," before shuffling away, wondering where you went wrong.

Where we go wrong, more often than not, is in handling the facts of a problem but not the feelings that accompany it. The technology problem is solved, but the feelings that the problem aroused in the user — anger, disappointment or frustration — are unresolved.

I can imagine what you have to say to that: "Dealing with feelings is not in my skill set." We geeks are adept at handling the facts of people's problems and notoriously oblivious to their feelings. But if you want to be good at working with nontechnical people, you have to expand your ability to deal with both. Whether they ask for it or not, whether they realize it or not, they need you to help them resolve both to move forward.

So why don't they just tell you that they're upset? Two reasons: At work, people don't feel comfortable talking about feelings. It's safer to complain about facts. And sometimes it's hard to put feelings into words. People may not even be able to articulate the nature of their disappointment.

I happen to think that geeks can handle these situations. We're problem-solvers, and if we just expand our definition of the problems we solve to include both the facts and the underlying feelings, we can deal with them like any other difficulty. Relax; you don't have to be Dr. Phil. You just need to use some responsive words and send subtle signals that show you care.

Empathize methodically. Train yourself to recognize emotions that aren't explicitly stated. Listen to users' word choices. ("It just died on me.") Recognize the feelings in their tone of voice. Put yourself in their shoes. Then, simply acknowledge what they're feeling by saying something such as, "This must be really frustrating for you." When you do that, users feel that you are trying to help them, as people, rather than just tending to the machines. And when the problem is solved and the case closed, speak to both the technical and experiential parts of the problem. Say something like, "It's working now and should make your life a whole lot easier." Seriously — it's that simple.

Apologize with dignity. Sometimes a simple apology will make the difference, even though you have nothing to apologize for. It's not a sign of weakness to let someone know you're sorry that they're experiencing discomfort or inconvenience. It's not necessarily an admission of personal guilt either. Just say, "I'm sorry that this is so difficult."

Share your own feelings about the situation. It comforts people to know that they aren't the only ones who might feel a certain way about a situation. Letting them know about your own experiences allows you to build a relationship rather than conduct a transaction. When you say, "This has been keeping me up at night too," you're sharing in the person's urgency and upset.

Technical people who can navigate both facts and feelings are the ones that business people really want to work with. When you include the user's emotional life in your problem definition, you become that magical person who can work with anyone. ◆

Paul Glen, CEO of Leading Geeks, is devoted to clarifying the murky world of human emotion for people who gravitate toward concrete thinking. His newest book is *8 Steps to Restoring Client Trust: A Professional's Guide to Managing Client Conflict*. You can contact him at info@leadinggeeks.com.

Check **"Launch website"** off the list
(before lunch)

iPage Makes Building Websites Easy

There's plenty to do when starting a business. Too often, launching a website gets pushed down on the list. But, that's where people are looking for you *now*. With iPage, you can have a website live in under an hour. A FREE DOMAIN, along with a choice of site- and store-builders makes it quick, easy and affordable.

Exclusive Offer
Get 3 Months
FREE
Create & Run Your Website
Only **$3.50** Per Month*

iPage

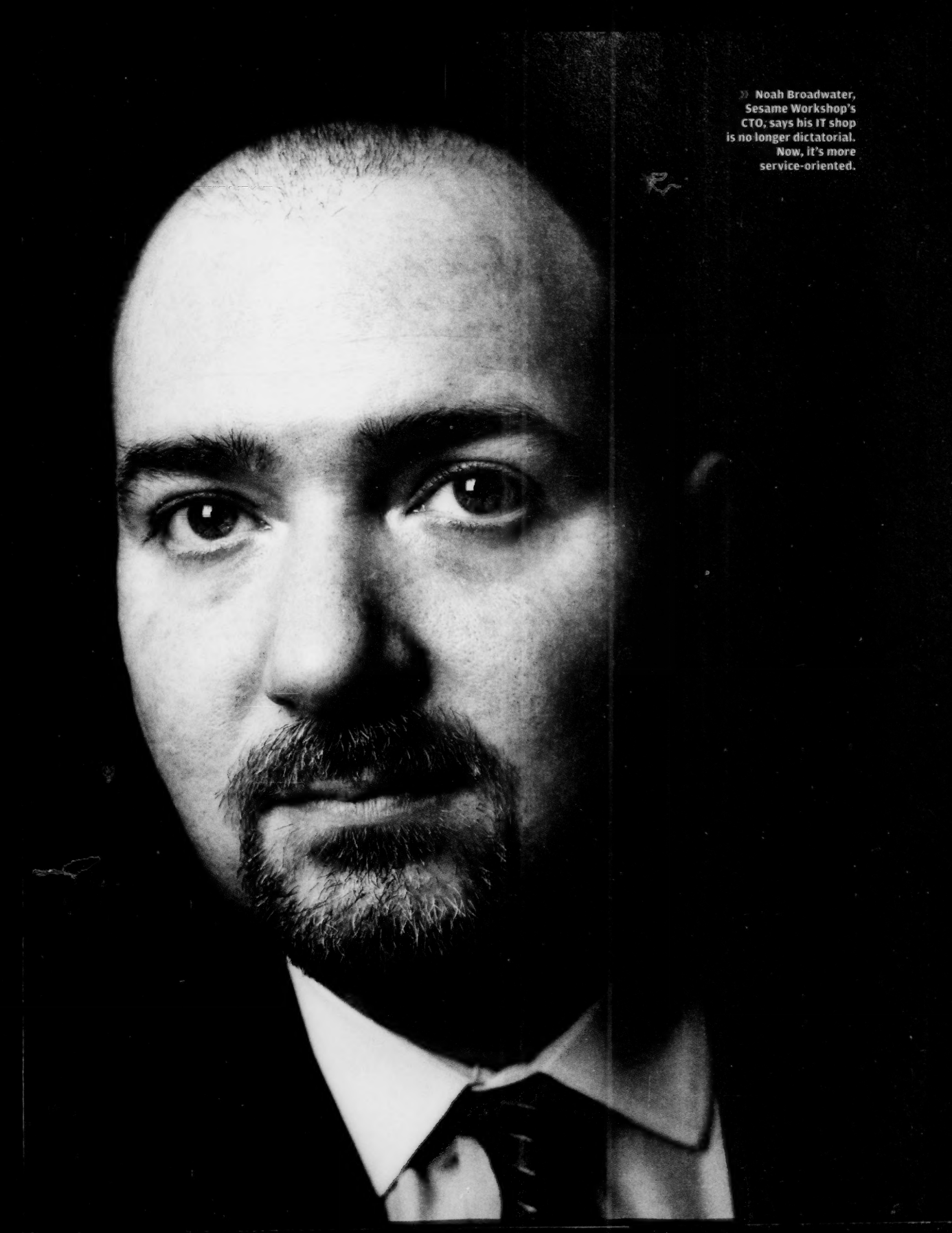
Call us **877-472-4399**
Get this deal at **ipage.com/cw**

*3-months free available with 12, 24 and 36 month plans only. This is an introductory offer that is available for the first term only, plans renew at regular rates, which are available at ipage.com. Promotional offers are subject to change without notice. ©2012 iPage.

THE UPSIDE OF Shadow IT

Tech-savvy employees have long bypassed IT to get their hands on hot technologies. **Rather than standing in the way, smart CIOs are now embracing and even encouraging shadow IT.** Here's why.

BY JULIA KING



» Noah Broadwater, Sesame Workshop's CTO, says his IT shop is no longer dictatorial. Now, it's more service-oriented.

FIRST, A SCARY STATISTIC: Gartner predicts that in less than three years, 35% of enterprise IT expenditures will happen outside of the corporate IT budget. Employees will regularly subscribe to collaboration, analytic and other cloud services they want, all with the press of a button. Others will simply build their own applications using readily available cloud-based tools and development platforms. Either way, the corporate IT department will be bypassed. As one industry pundit put it, "it will feel like the inmates are running the asylum."

Now, the reality: Employees have been doing an end run around corporate IT and using shadow IT systems — that is, systems built and used in companies without organizational approval — for decades. Look no further than the volumes of company and customer data stored in Excel files scattered from here to kingdom come. Indeed, results of PricewaterhouseCoopers' Digital IQ Survey indicate that at 100 of the companies PwC ranks as "top performers," IT controls less than 50% of corporate technology expenditures.

Those percentages "are not shocking at all because in many cases, the person who understands what to buy is not an IT person," says John Murray, CIO at Genworth Wealth Management in Pleasant Hill, Calif. "Classic shadow IT is out there, and if it's something that is serving a purely functional need and is something that is not customer-facing, it's not the worst thing in the world."

To empower employees to do it their way is a huge deal. It's an inevitable reality. **As I see it, there's a bigger risk associated with not doing that.**

MARK DAJANI, CIO, KRAFT FOODS

So what's the big deal about the Gartner statistic, and why does it spook so many of today's IT professionals?

There's the loss of control, of course. But more alarming is the exponential growth in the number of rapidly emerging consumer technologies, cloud services and roll-your-own apps. It's both a volume and velocity issue. Ten years ago, in contrast, a scant 10% of tech expenditures happened outside of IT, according to Dion Hinchcliffe, a veteran business and IT strategist and executive vice president at Dachis Group, a social business consultancy in Austin. "Now, IT is cheap, often free. That allows people to evaluate and acquire solutions on the ground," he notes.

And more of the workforce is doing just that. "In general, people are much more tech-savvy. They know what is possible. Everyone is trained that 'there's an app for that,' " Hinchcliffe says.

Innovation At the Edges

JUST BECAUSE tech-savvy business users are increasingly tapping consumer-type apps and other shadow systems to do their day-to-day work, there is still plenty of room — and need — for innovation from IT, experts say.

Yet, to provide truly useful innovations that will add value, most IT organizations must get far more deeply entrenched in the business.

"Innovation is still happening in IT — be it IT-led or IT-facilitated — but only at those organizations where there's an explicit agreement that IT has a role in market-facing innovation," notes PwC principal Chris Curran. Too much of the time, Curran says, "there's a disconnect" between IT and making an impact in the marketplace.

Rather than standing in the way, some of the savviest CIOs are embracing and even encouraging so-called rogue IT.

As Kraft Foods CIO Mark Dajani put it, "Why create a technology environment that will just drive to average [business] performance? To empower employees to do it their way is a huge deal. It's an inevitable reality. As I see it, there's a bigger risk associated with not doing that."

Here's how you can — and why you should — lead your technology organization through the transition from "command-and-control IT" to what Hinchcliffe calls "cooperative IT."

Accept the Inevitable

At Genworth, the company's trading team is using an outside application developer for certain services. "IT knows about it, but we're not driving it," Murray says, noting that IT doesn't operate at the speed that the trading team requires.

Today, "applications are not done by IT; releases are not done by IT. Instead, [business is] operating in a different sandbox, which requires a different team and a different cycle," he says. Instead of tussling over ownership and control of certain services and applications, Murray says IT focuses on what data the applications use, whether or not an application is mission-critical, and who is in the best position to know the application is running properly.

"The world is changing, and you have to be honest enough to acknowledge that your business customer is sometimes the most appropriate owner of a particular application," he says.

Instead of fighting to retain control, IT leadership should focus on managing risk and learn to spot where employees are adding value with their self-provisioned tools and services, says Brian Lillie, CIO at Equinix, a Redwood City, Calif.-based company that operates large data centers in 13 countries.

Workers in Equinix's vertical marketing group used the Amazon cloud to build what Lillie describes as "a very slick sales tool" that measures network latency around the world, depending on where your IT assets are located.

"My team didn't do it, but I still like to brag about it. It's a key tool," Lillie says. Now, IT is exploring how to integrate the tool into other systems at the company.

"Instead of us throwing up roadblocks, we said, 'Let's enable this and give these guys a way to exploit it,' " he says. "It definitely requires a mind shift [for IT]. "But people are creative and want to innovate, and sometimes real breakthroughs can come from anywhere."

Get Ahead of the Demand

New York-based Sesame Workshop, the producer of *Sesame Street*, has more than 100 employees working with outside vendors to make interactive games and toys licensed by the nonprofit organization. They were using cloud and consumer technologies, such as YouSendIt, a digital file delivery service for exchang-

Part of the problem is that IT leaders "are pretty insular in terms of how and where they get their ideas," Curran says. "People don't spend enough time really understanding what's going on around them."

To gain a greater understanding, "keep your eye on the periphery of your organizations," advises Dion Hinchcliffe, senior vice president of the Dachis Group. "IT initiatives are moving to the far corners and in the trenches where people have problems and need to solve them not in weeks or months, but hours. They're evaluating five or 10 things in an hour and solving their problems," he says.

Curran tells a story that he says is common enough, this one from a global high tech company where he recently had a consulting engagement.

"One of their board members asked what the company was doing with social media. Peeling back the onion, we found a knowledge management function that reported up to the COO that was responsible for the internal enterprise collaboration side of social media. We also found five other significant teams that had customer-facing, market-facing or some hybrid collaborative initiative using IT," Curran recalls.

"But when we went to IT and asked what they had, they said they didn't have anyone working on this. There was no coordination function within IT that was even loosely trying to plug the pieces together," he says.

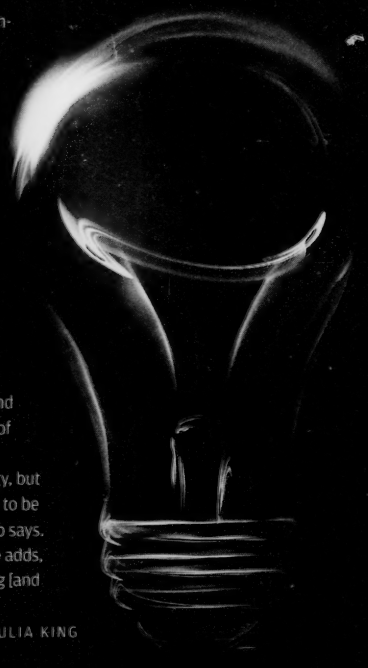
Curran says IT also needs to revamp its now out-of-date application development techniques to be truly innovative — and to provide *useful* innovations.

"What I'm still seeing is old waterfall methodology, checklists and big document requirements and business case documents and scope documents, which are all very heavyweight," he notes. "These are things that are made for large ERP projects or massive Cobol projects and don't take into account agile and rapid methods or the good lessons learned around iterative development and prototyping. IT's methods are old and need to be updated. The approaches to software building are antiquated."

Jim DiMarzio, CIO at Mazda North American Operations in Irvine, Calif., has found a way around this particular hurdle in the form of more "proof of concept" projects.

"IT people like getting involved in new technology, but they understand there's a risk and they don't want to be tagged with a technology that has failed," DiMarzio says.

"When we tag projects as 'proof of concept,' " he adds, "they understand it is something that we are trying [and may or may not ultimately deploy]."



JULIA KING

FIRST, A SCARY STATISTIC: Gartner predicts that in less than three years, 35% of enterprise IT expenditures will happen outside of the corporate IT budget. Employees will regularly subscribe to collaboration, analytic and other cloud services they want, all with the press of a button. Others will simply build their own applications using readily available cloud-based tools and development platforms. Either way, the corporate IT department will be bypassed. As one industry pundit put it, "it will feel like the inmates are running the asylum."

Now, the reality: Employees have been doing an end run around corporate IT and using shadow IT systems — that is, systems built and used in companies without organizational approval — for decades. Look no further than the volumes of company and customer data stored in Excel files scattered from here to kingdom come. Indeed, results of PricewaterhouseCoopers' Digital IQ Survey indicate that at 100 of the companies PwC ranks as "top performers," IT controls less than 50% of corporate technology expenditures.

Those percentages "are not shocking at all because in many cases, the person who understands what to buy is not an IT person," says John Murray, CIO at Genworth Wealth Management in Pleasant Hill, Calif. "Classic shadow IT is out there, and if it's something that is serving a purely functional need and is something that is not customer-facing, it's not the worst thing in the world."

To empower employees to do it their way is a huge deal. It's an inevitable reality.

As I see it, there's a bigger risk associated with not doing that.

MARK DAJANI, CIO, KRAFT FOODS

So what's the big deal about the Gartner statistic, and why does it spook so many of today's IT professionals?

There's the loss of control, of course. But more alarming is the exponential growth in the number of rapidly emerging consumer technologies, cloud services and roll-your-own apps. It's both a volume and velocity issue. Ten years ago, in contrast, a scant 10% of tech expenditures happened outside of IT, according to Dion Hinchcliffe, a veteran business and IT strategist and executive vice president at Dachis Group, a social business consultancy in Austin. "Now, IT is cheap, often free. That allows people to evaluate and acquire solutions on the ground," he notes.

And more of the workforce is doing just that. "In general, people are much more tech-savvy. They know what is possible. Everyone is trained that 'there's an app for that,' " Hinchcliffe says.

Innovation At the Edges

JUST BECAUSE tech-savvy business users are increasingly tapping consumer-type apps and other shadow systems to do their day-to-day work, there is still plenty of room — and need — for innovation from IT, experts say.

Yet, to provide truly useful innovations that will add value, most IT organizations must get far more deeply entrenched in the business.

"Innovation is still happening in IT — be it IT-led or IT-facilitated — but only at those organizations where there's an explicit agreement that IT has a role in market-facing innovation," notes PwC principal Chris Curran. Too much of the time, Curran says, "there's a disconnect" between IT and making an impact in the marketplace.

VIOLETA SHISAREVA / FOTOLIA

Rather than standing in the way, some of the savviest CIOs are embracing and even encouraging so-called rogue IT.

As Kraft Foods CIO Mark Dajani put it, "Why create a technology environment that will just drive to average [business] performance? To empower employees to do it their way is a huge deal. It's an inevitable reality. As I see it, there's a bigger risk associated with not doing that."

Here's how you can — and why you should — lead your technology organization through the transition from "command-and-control IT" to what Hinchcliffe calls "cooperative IT."

Accept the Inevitable

At Genworth, the company's trading team is using an outside application developer for certain services. "IT knows about it, but we're not driving it," Murray says, noting that IT doesn't operate at the speed that the trading team requires.

Today, "applications are not done by IT; releases are not done by IT. Instead, [business is] operating in a different sandbox, which requires a different team and a different cycle," he says. Instead of tussling over ownership and control of certain services and applications, Murray says IT focuses on what data the applications use, whether or not an application is mission-critical, and who is in the best position to know the application is running properly.

"The world is changing, and you have to be honest enough to acknowledge that your business customer is sometimes the most appropriate owner of a particular application," he says.

Instead of fighting to retain control, IT leadership should focus on managing risk and learn to spot where employees are adding value with their self-provisioned tools and services, says Brian Lillie, CIO at Equinix, a Redwood City, Calif.-based company that operates large data centers in 13 countries.

Workers in Equinix's vertical marketing group used the Amazon cloud to build what Lillie describes as "a very slick sales tool" that measures network latency around the world, depending on where your IT assets are located.

"My team didn't do it, but I still like to brag about it. It's a key tool," Lillie says. Now, IT is exploring how to integrate the tool into other systems at the company.

"Instead of us throwing up roadblocks, we said, 'Let's enable this and give these guys a way to exploit it,' " he says. "It definitely requires a mind shift [for IT]. "But people are creative and want to innovate, and sometimes real breakthroughs can come from anywhere."

Get Ahead of the Demand

New York-based Sesame Workshop, the producer of *Sesame Street*, has more than 100 employees working with outside vendors to make interactive games and toys licensed by the nonprofit organization. They were using cloud and consumer technologies, such as YouSendIt, a digital file delivery service for exchang-

Part of the problem is that IT leaders "are pretty insular in terms of how and where they get their ideas," Curran says. "People don't spend enough time really understanding what's going on around them."

To gain a greater understanding, "keep your eye on the periphery of your organizations," advises Dion Hinchcliffe, senior vice president of the Dachis Group. "IT initiatives are moving to the far corners and in the trenches where people have problems and need to solve them not in weeks or months, but hours. They're evaluating five or 10 things in an hour and solving their problems," he says.

Curran tells a story that he says is common enough, this one from a global high tech company where he recently had a consulting engagement.

"One of their board members asked what the company was doing with social media. Peeling back the onion, we found a knowledge management function that reported up to the COO that was responsible for the internal enterprise collaboration side of social media. We also found five other significant teams that had customer-facing, market-facing or some hybrid collaborative initiative using IT," Curran recalls.

"But when we went to IT and asked what they had, they said they didn't have anyone working on this. There was no coordination function within IT that was even loosely trying to plug the pieces together," he says.

Curran says IT also needs to revamp its now out-of-date application development techniques to be truly innovative — and to provide *useful* innovations.

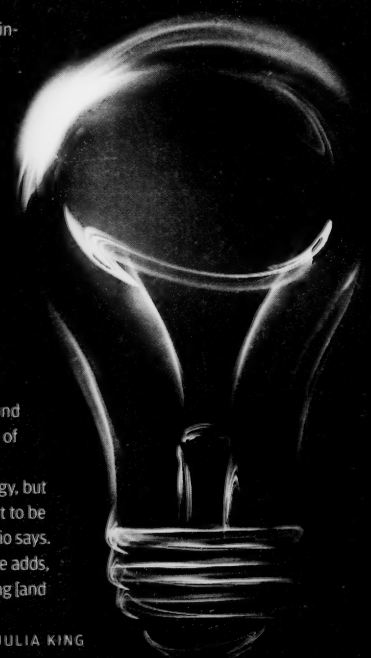
"What I'm still seeing is old waterfall methodology, checklists and big document requirements and business case documents and scope documents, which are all very heavyweight," he notes. "These are things that are made for large ERP projects or massive Cobol projects and don't take into account agile and rapid methods or the good lessons learned around iterative development and prototyping. IT's methods are old and need to be updated. The approaches to software building are antiquated."

Jim DiMarzio, CIO at Mazda North American Operations in Irvine, Calif., has found a way around this particular hurdle in the form of more "proof of concept" projects.

"IT people like getting involved in new technology, but they understand there's a risk and they don't want to be tagged with a technology that has failed," DiMarzio says.

"When we tag projects as 'proof of concept,' " he adds, "they understand it is something that we are trying [and may or may not ultimately deploy]."

– JULIA KING



ing large design and video files. CTO Noah Broadwater took notice, and then contacted YouSendIt to secure an enterprise version of the popular service.

The upshot: "IT has become a trusted business partner. It now helps users with contracts," says Broadwater.

The IT group also launched a dedicated R&D group that focuses specifically on consumer technologies and works on projects dealing with how to best leverage Facebook, Google, Twitter and mobile devices. Broadwater is fond of pointing out that *Sesame Street* character Big Bird has been tweeting for the last two and a half years.

"By having early adopters in IT and getting ahead of technologies, users will now come to us when they want to use something like Basecamp [a Web app for storing, coordinating and managing projects]," Broadwater explains. "When they do, we tell them about Central Desktop," which he describes as a similar cloud-based project management service "but with better integration into the enterprise."

The challenge is that sometimes when something has been OK'd, then it's not cool. **There's a coolness to being in the shadows, which drives me nuts.**

BRIAN LILLIE, CIO, EQUINIX

Today, *Sesame Street* co-producers in offices as far away as Afghanistan and Pakistan can upload rough cuts of video to the cloud, and producers in New York can edit and annotate it, he says, noting that 30% of expenses within the official IT budget at Sesame Workshop are devoted to cloud services, consumer services and mobile enablement.

"IT used to be dictatorial, issuing edicts and hammering on security, security, security," Broadwater says. "Now, we've moved to where we're a service organization."

Broadwater also notes that what was once considered shadow IT has also saved the company money. For example, the enterprise YouSendIt service, which costs $50,000 for two years, replaced FTP services that were costing $140,000 for the same period. Similarly, before using Central Desktop, staffers were physically shipping hard drives. The cloud-based service has cut those costs by $20,000, Broadwater says.

At Equinix, Lillie set up an "Amazon sandbox" for developers who were buying Amazon's cloud services on their own to develop apps.

Developing apps on Amazon, he says, is great "because it doesn't tax IT's resources. But as opposed to employees pulling out their credit cards and paying for Amazon on their own, why not give it to them? You become part of shadow IT and the lines start to blur," he says. "IT is expanding its influence, and more importantly, you're working as a team."

But there is a downside.

"The challenge is that sometimes when something has been OK'd, then it's not cool," says Lillie. "There's a coolness to being in the shadows, which drives me nuts."

Redefine IT's Role as Educator and Policymaker

"Consumerization of IT is an inevitable reality," says Kraft's Dajani. One of IT's expanding roles in this new world is to develop and implement security and other policies that help rather than hinder employees, regardless of the device they use to do their work.

Kraft, for example, is virtualizing its applications environment so mobile workers in particular can use the device of their choice. "But users have to keep their versions of software up to date, and we keep track of that," Dajani says. "If people are running software on Androids and it's not up to date after 30 days, we lock them out."

"We need to empower employees, but we also need to teach them," he adds.

Todd Coombes, CIO at insurer CNO in Indianapolis, works with his peers in the lines of business to develop policies that will work for both IT and users who want to innovate using Web-based apps and consumer technology.

"If I were to take a hard line and say 'no shadow IT,' I'm not going to be adding any value for my business partners, and it will create resentments and wreck relationships," Coombes says. Moreover, many of the most innovative ideas for high-value productivity applications come from workers in the field, he adds.

CNO's T64 application (T64 is short for Turning 64), for example, was developed by the company's independent agents who sell insurance door-to-door, mainly to retirees. The T64 app lets agents see on their mobile devices a list of potential clients who are turning 64 years old, along with directions to the clients' homes.

" 'We're in this together' is now much more than a tagline," says Rick Bauer, a former CIO and now director of product management at CompTIA, a provider of vendor-neutral certifications for IT professionals. "No one else is going to educate the enterprise about using devices in ways that boost productivity and in ways that are safe. IT has got to be a leader in helping people to think about these things."

Find Your Allies

If you're looking for shadow IT, one of the first places you'll find it is in the sales and marketing department, experts say. These front-line workers have little patience with time-consuming, checklist-laden application development cycles, which is what they have come to expect from IT. They want what they want, and they want it now. So they often gin it up for themselves.

"There's a disconnect between the traditional IT mindset and trying to get out a new application in a timely manner," notes PwC principal Chris Curran. "When a sales guy comes to IT and says, 'We need to get something out there now,' it can't take a year."

Curran advises PwC's clients to make friends with and learn from business users. More than likely, many have already been experimenting, especially with cloud-based apps for analytics and processing big data, he says.

At Genworth, Murray revamped the IT pay structure to reflect the value of building relationships with people outside of IT. As he sees it, knowing your partners in the business is part of IT becoming more agile.

"The core tenet of agile development is that everyone who has a say in a project is in the room interacting with each other," he says. IT staff can't do that if they don't know their business counterparts.

"Behavior tends to follow the compensation structure, so everyone in IT has a goal of relationship-building with business partners," Murray says. "You want to have social equity to trade on. Every project has bumps in the night and when that happens, you want and need the social equity [with your business partners] to cushion you through it," he explains.

In fact, social equity is a key metric during IT employee reviews at Genworth. "If you have someone who is technically excellent, but they've never had lunch with their customer or know what sports their kids play, you haven't succeeded," Murray says. "You haven't become integrated into the [larger] organization."

The bottom line, these CIOs say, is that the corporate technology landscape has changed for good, and the IT organization must change with it. IT must focus on those areas where it can add the greatest value — providing workers around the corporate edges with secure access to data and tools to innovate — even if that means application development tools.

"IT's role is to enable people to solve problems on the ground," says CompTIA's Bauer. "The CIOs and IT organizations that will be winners are those that understand that the game has changed in ways that will never revert back to the way IT was before. Like the church of existentialism, we don't quite know where we're going, but we're on our way." ◆

Whenever Wherever

"With Box, I run the entire company off my iPad."

– Lance Locher, Founder, Clear Channel-TTN

82% of Fortune 500s Manage Content Simply and Securely With Box®

Get the FREE CIO TOOLKIT: www.box.com/ciocom

box

E-DISCOVERY IN THE Cloud

YOUR COMPANY is embroiled in a lawsuit, and your general counsel has come to IT for help in conducting e-discovery on a batch of data. You easily gather some of the information from storage in your data center, but the rest of it is sitting in the cloud. Easy enough, you think, to get that data as well.

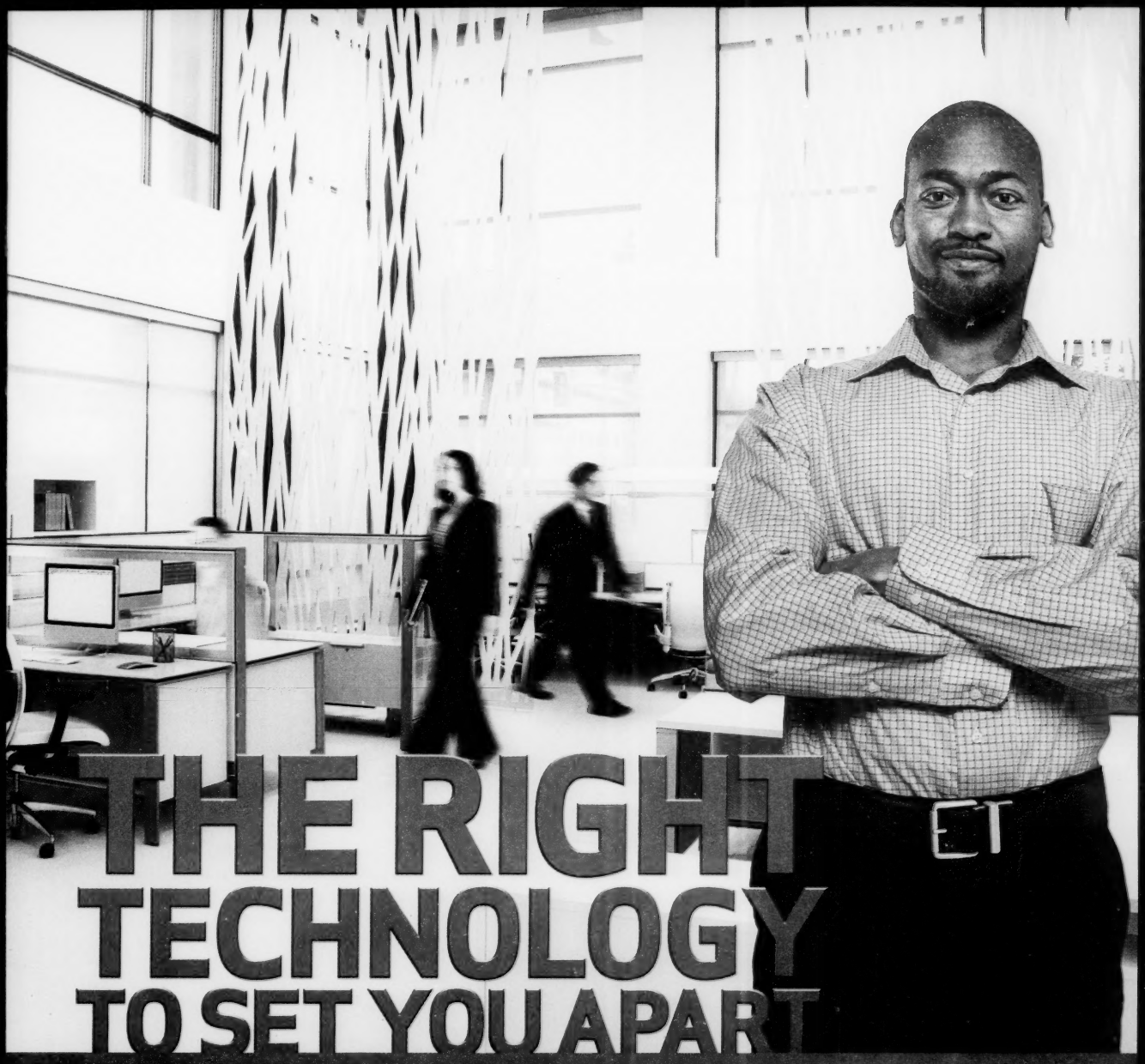
You may be in for a rude awakening.

Many lawyers and IT staffers "just assume if they put data in the cloud it's going to be at their fingertips, that it's inherently discoverable," says Barry Murphy, co-founder and principal analyst at

Continued on page 26

DON'T WAIT UNTIL THE LAWYERS COME CALLING TO FIGURE OUT IF YOU CAN FIND YOUR CLOUD-BASED DATA. *By Tam Harbert*

BLEND IMAGES / FOTOLIA



THE RIGHT TECHNOLOGY TO SET YOU APART

THE EXPERIENCE, STRATEGIC ALLIANCES AND NETWORK TO MAKE THE DIFFERENCE.

VERIZON SOLUTIONS FOR ENTERPRISE

Verizon enables globally scalable cloud-based solutions that mobilize access to critical business applications and data, providing flexibility and reduced IT costs. Our enterprise-class platform can be customized to your business needs, while our management services will help you optimize your solutions during and after deployment. With leading security solutions and the reliability of the fastest 4G LTE network in America, Verizon has the integrated solutions to take your organization further.

Start making a difference for your business.
Visit: verizonwireless.com/enterprise

verizon

4G LTE is available in more than 200 cities in the U.S. Network details & coverage maps at **vzw.com**. © 2012 Verizon Wireless.

Continued from page 24

eDJ Group, a consulting firm specializing in e-discovery. "That's not necessarily the case."

Under the Federal Rules of Civil Procedure, a party to litigation is expected to preserve and be able to produce electronically stored information that is in its "possession, custody or control." But in the cloud, the situation isn't so clear. Information that's electronically stored in the cloud is presumably under your control, but it may not technically be in your possession, says James M. Kunick, principal and chair of the intellectual property and technology practice at law firm Much Shelist.

Because this area is so new, the legal ramifications of storing data in the cloud are still murky. Among the few instances of relevant case law is *Gordon Partners v. Blumenthal*, which found that if a company has "access to documents to conduct business, [then] it has possession, custody and control of the documents for purpose of discovery," according to Murphy.

> **You need to make sure your contract with the provider allows you to control what happens if they get a subpoena.**
>
> JAMES M. KUNICK, PRINCIPAL, MUCH SHELIST

That finding could pose a significant problem. Depending upon the relationship it has with its cloud vendor, a company might not know exactly where its data is stored. And even if it does, it might not be able to access information in the cloud in the right format and in a timely manner.

And there is a danger that companies can lose control over access to that data — opposing attorneys, for example, might subpoena not only your company, but also your cloud provider. "You need to make sure your contract with the provider allows you to control what happens if they get a subpoena," Kunick warns.

Know the Potential Problems

And yet most companies are blissfully unaware of the potential problems with e-discovery, says Murphy. In a recent survey of legal and IT professionals who use cloud services, Murphy found that less than 16% of 172 respondents had put an e-discovery plan in place before moving data to the cloud. Even more alarming, he says, nearly 60% of the respondents said that they didn't know whether they had an e-discovery plan or not.

In another survey, conducted last year by Clearwell Systems (an e-discovery vendor acquired by Symantec last year) and consulting firm Enterprise Strategy Group, nearly 60% of more than 100 Fortune 2000 enterprises and government agencies said they felt that their cloud-based applications could potentially be subject to e-discovery.

In the same survey, however, only 26% of the respondents said they considered themselves somewhat or very prepared for e-discovery requests. In other words, says ESG analyst Katey Wood, "they said yes, they think they'll have litigation, but no, they are not prepared for it."

Murphy says he thinks lawyers might even start to target cloud-based sources of information, hoping to catch opponents unprepared. A wily opposing attorney could, for example, request discovery of data in a software-as-a-service provider's system, knowing that most companies have little experience collecting data from that particular source.

"Until we have a successful anecdote in which someone gets sued and they run their search successfully on data in the cloud, until they've actually done it at speed and to scale, we won't really know" how prepared companies are for e-discovery in the cloud, he says.

Tom Conophy, CIO of InterContinental Hotels Group, is one executive who believes he's got his bases covered. One of the $18 billion hospitality company's many cloud initiatives is a project to move its global reservations system, now on a mainframe, to the cloud.

IHG is in the process of choosing a cloud provider. In discussions about contract terms, the company is being "very careful about making sure that our intellectual property and our content is ours, and that at any given time we have the ability to access it, export it, turn it off — whatever we need to do with it," says Conophy. "It's no different than if it was running in our own [data center]."

Be Mindful of Email, Social Media

Potential e-discovery problems vary depending on the type of cloud provider and the contract, observers say. Because email has been subject to e-discovery for a while, many email hosting providers have this covered in their contracts. And large cloud vendors that typically serve Fortune 500 companies are likely to pay more attention to the discoverability of data.

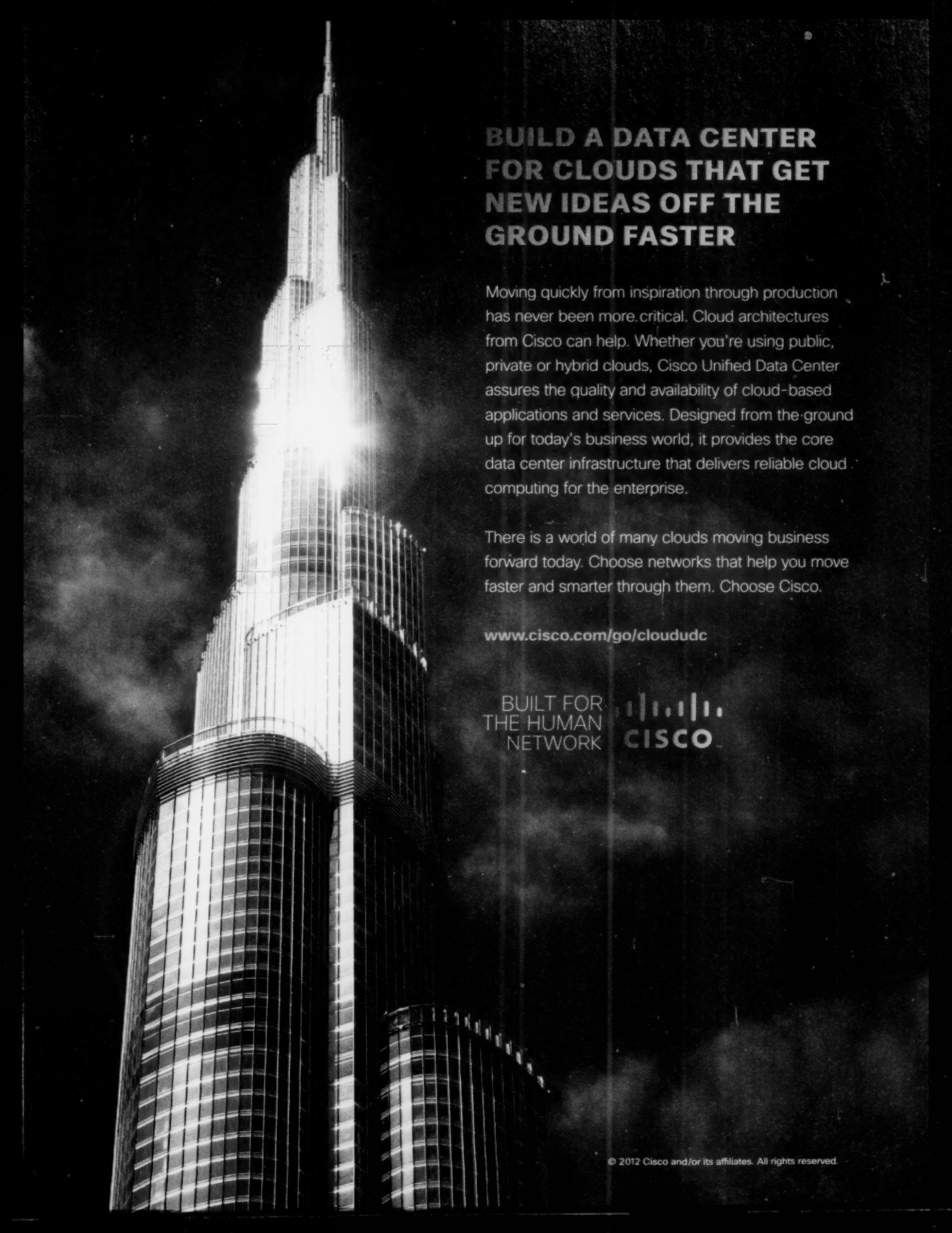
With other providers, the area can be murky. "A lot is negotiated on a vendor-by-vendor basis," says Wood.

The ease with which you can get data out of a SaaS-based system depends on the vendor. Salesforce.com, for example, "is not an easily searchable system — because it's not a content management system per se — and yet people are storing information there," says Murphy.

Social media represents a big challenge. Sites such as Facebook, LinkedIn and Twitter rely on standard contracts with users — both individuals and organizations that use the services for marketing. What if a company wants to retrieve something a former employee wrote on Facebook? If the individual posted the comment on his personal account, the company has no right to access it.

That means companies must consider constantly collecting the content of all employees' posts as a safeguard. Certain regulated companies in financial

Continued on page 28


BUILD A DATA CENTER FOR CLOUDS THAT GET NEW IDEAS OFF THE GROUND FASTER
Moving quickly from inspiration through production has never been more critical. Cloud architectures from Cisco can help. Whether you're using public, private or hybrid clouds, Cisco Unified Data Center assures the quality and availability of cloud-based applications and services. Designed from the ground up for today's business world, it provides the core data center infrastructure that delivers reliable cloud computing for the enterprise.
There is a world of many clouds moving business forward today. Choose networks that help you move faster and smarter through them. Choose Cisco.
www.cisco.com/go/cloududc
BUILT FOR THE HUMAN NETWORK
CISCO
© 2012 Cisco and/or its affiliates. All rights reserved.

Continued from page 26

services already do this, notes Murphy.

Companies that don't do that might encounter difficulties if they need to retrieve content from social sites. Although social media companies say that anyone can write to their open APIs to get the data they need, "accessibility changes on a regular basis as the APIs of the vendors change," Murphy points out.

In addition, how long would it take to download all the data? Murphy says most sites "throttle their APIs," which could slow downloads or search results. Some e-discovery service providers have started to target this problem. "They pay a lot of money to be in these API programs," he says. "They are essentially buying less throttling."

Know the Location of Your Data

Whatever type of cloud you're dealing with, it's important to know exactly where your data resides. In some cases, a cloud vendor might be storing it in a data center in a different country, where different data privacy and e-discovery rules apply.

Further complicating matters is the possibility that your primary cloud provider could be using subcontractors. That's frequently the case, says Kunick, meaning "it's more than likely that your data will reside in several locations." Even if you have an ironclad contract with your primary provider, can that vendor access information in a prompt and defensible way if the data is held by a subcontractor?

Before there was a cloud, companies would contract with large managed service providers and would spell out most of these provisions in long, detailed contracts, Kunick says. But most contracts with cloud providers don't cover such details. "With cloud service providers, the contracts are seldom longer than 10 pages," he says.

Beware Renegade Business Units

Even if contracts cover every detail, shadow IT activities within corporations can be a source of other e-discovery problems. Charles Skamser, president and CEO of consulting firm eDiscovery Solutions Group, has spent several months interviewing some 60 cloud service providers. Most told him that their clients aren't asking about e-discovery. In fact, "some [cloud service providers] even said, 'What's e-discovery?' " Skamser reports. In what may be a more telling finding, Skamser's research indicates that a high percentage of cloud customers are "renegade business units" of big companies seeking to do an end run around what they perceive as unresponsive internal IT organizations (see "The Upside of Shadow IT," page 18).

This could be a recipe for disaster. If a large corporation is sued and presented with an e-discovery request, the general counsel would likely ask the IT department for help. The attorney might not ask a particular business unit, and even if he did, the business unit's manager probably wouldn't know what to do and the unit's contract with the vendor probably wouldn't include any e-discovery provisions, Skamser explains.

Develop a Comprehensive Plan

Above all, a corporation should have a comprehensive information governance and discovery plan that covers all sources of data, including the cloud, says Murphy. The plan needs to cover not only how to conduct e-discovery on data stored in the cloud, but also how to review that data alongside data residing elsewhere. "You need to apply the same discipline on all data sources," he notes.

It's not too late to prepare for e-discovery on cloud-based data, says Murphy. "Best practices are beginning to emerge, and… companies have the opportunity to get ahead of the curve," he wrote in a recent report.

"The key is to treat cloud-based sources of data like any other data source," says Murphy. "Include it in data maps, have a plan for collecting and preserving it, know how to manage the chain of custody, and understand when to dispose of the data so that it poses no e-discovery risk." ◆

Harbert *is a Washington, D.C.-based writer specializing in technology, business and public policy and a frequent* Computerworld *contributor.*

FLAVORS OF E-DISCOVERY

AS IS THE CASE with all things cloud-related, "e-discovery in the cloud" means different things to different people. This story focuses on e-discovery of data that has been stored in the cloud. But e-discovery and the cloud intersect in a number of ways. Here's how Christine Taylor, an analyst at Taneja Group, delineates the market:

- **SaaS-based e-discovery:** To some, "e-discovery in the cloud" means using the cloud to deliver tools used for e-discovery. These SaaS packages typically cover one of several e-discovery tasks, such as collection, preservation or review.
- **Hosted e-discovery:** E-discovery in the cloud can also mean hiring a hosted services provider to conduct e-discovery on data stored in the cloud. There are two types of hosted e-discovery. In one scenario, a customer stores data in the cloud with the understanding that the cloud vendor will do e-discovery on that data if the need arises. In the other scenario, a customer keeps its archives in-house, but if it encounters legal trouble it sends the relevant data to a service provider that takes care of e-discovery.
- **E-discovery on data stored in the cloud:** A third type of e-discovery in the cloud involves e-discovery on data that a user has stored in the cloud without making arrangements with the vendor about how e-discovery will be handled. This is risky, says Taylor. The service-level guarantees of even the most trusted cloud vendors "are notoriously poor," she wrote in a report, adding that vendors often "have few mechanisms in place to report on physical data locations to their customers."

– TAM HARBERT

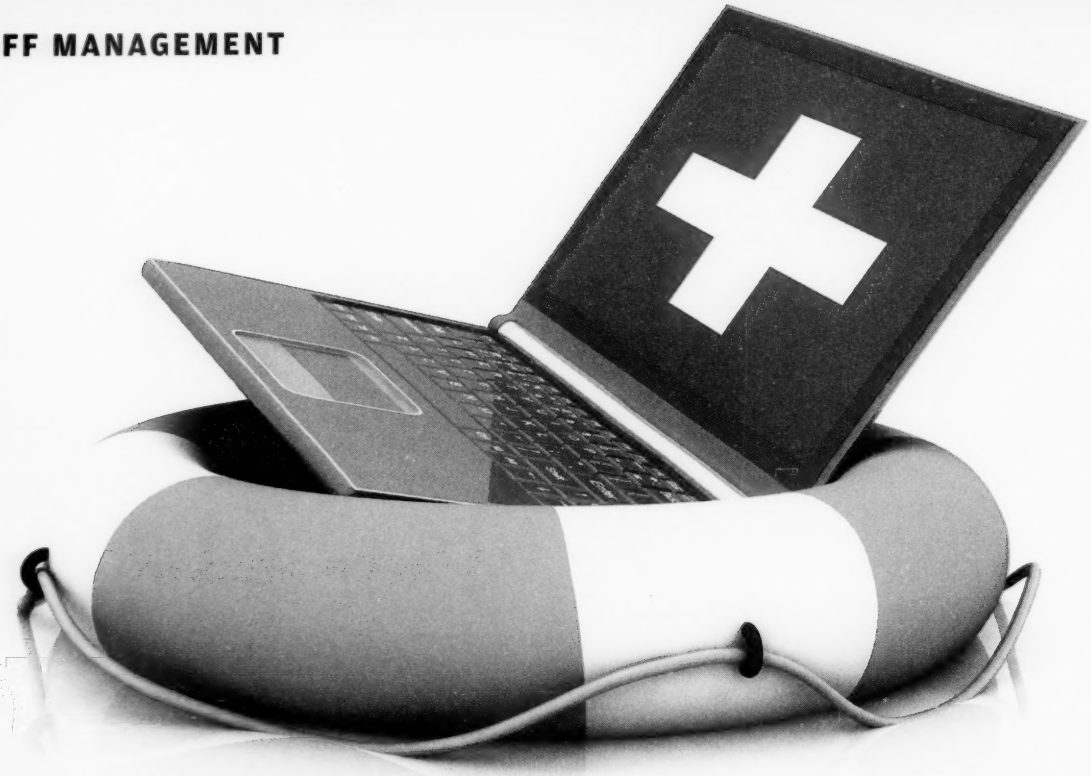
Copyright © 2011 VMware, Inc.

Today, 97% of the Fortune Global 500 rely on VMware,® the global leader in virtualization and cloud infrastructure. With VMware, you can leverage your existing IT investments as you transition to a secure, managed and controlled cloud solution. Because it's not about getting to *the* cloud. It's about getting to *your* cloud.

vmware®

The power behind your cloud.

Visit vmware.com/whiteboard



HELP FOR THE HELP DESK

Organizations work to improve the help desk by finding 'teaching moments' for users and focusing on efficiency.

BY JOHN BRANDON

A **HELP DESK** can be a real lifesaver for employees, not to mention a productivity boost. If a keyboard stops working or Outlook keeps crashing, a technician is just a phone call away. Even complex problems can usually be resolved internally, and relatively quickly, without the need for an outside vendor.

Yet, help desk technology is typically slow to evolve. Many large organizations still track tickets in complex, aging systems that aren't adept at pinpointing recurring problems,

FOTOLIA / 3DDOCK

don't work well on the latest smartphones or tablets, and don't provide detailed reports about average call times or how long it takes to resolve issues.

"Most corporate help desks are outdated," says Gartner analyst Jarod Greene. Many organizations are stuck using tools that merely report on the number of calls per day, month and year and don't have a clue about what he calls "feedback loops" — in other words, the recurring problems within an organization. That's a critical issue, Greene says, because over 50% of the perceived value of an IT organization comes from the help desk.

So if the help desk is stuck in the 1990s technology-wise, it's a good bet that IT's reputation is suffering, too.

"They end up automating bad processes, and fail to gain real efficiencies from the investment," Greene says.

Some organizations have found a way to improve the help desk. Whether it's a "teaching moment" at the University of Georgia, a system that provides more efficient tracking at Peugeot, or a way to watch for ticket patterns at De Beers Canada, the help desk is getting a much-needed assist.

University of Georgia:

EDUCATION-BASED SUPPORT

At the University of Georgia, with 10,000 employees and an enrollment of around 35,000 students, the help desk staffers have to perform triage on support requests quickly, resolve them if possible, and then pass the tough cases up to second-level support.

When calls are escalated, the help desk shifts gears. According to Rachel Moorehead, an IT professional assistant and supervisor at the university, calls become more than just a way to resolve problems.

"Every call is a teaching moment," she says, describing how help desk staffers tailor each interaction to the caller's technical expertise. When an IT major calls in about a problem with a login to an Outlook server, for example, staffers might explain how the logging files work. Even if the student is not an IT major, they still pass along tips — and generally find that every student and faculty member is open to the advice. The university uses BMC Remedy to log the initial call, and then Bomgar for screen-sharing.

Moorehead estimates that almost all of the university's second-level IT support tickets involve some sort of extra instruction.

Because support calls are focused on educating users, the goal is not necessarily to resolve problems quickly. The average resolution time for support calls is 5.17 hours, and an average screen-sharing session lasts 33 minutes. This compares to an industry average of one day for resolving issues of low to medium severity, according to Greene.

The help desk handled 4,395 support calls in the month of November alone, customizing responses to the needs of the users and their specific problems.

"This is the IT help desk equivalent of 'give a man a fish and you feed him for a day, but teach him to fish and you feed him for a lifetime,' " says Charles King, an analyst at Pund-IT.

Greene says the university is on the right track in how it uses a tiered strategy. The first level roots out problems quickly; the second tier uses remote sessions to provide more thorough support. That's important, he says, because of the average costs involved.

Initial calls to IT support can cost a company $1 to $10 per ticket; that's just for initial contact by phone or email to log the issue. Once the call gets to an actual human for first-level support, the cost rises to between $10 and $37 per transaction. If a more technical staff member becomes involved for second-level or even more complex issues, the costs are $37 to $250 per ticket.

"Using a remote-control and collaboration solution, Level 2 can help Level 1 resolve issues more efficiently, with the goal being to reduce escalations," says Greene. "In the same context, Level 1 can use remote control to teach end users how to resolve their own issues or guide them to knowledge-management documentation."

The point is not just to correct some problem or mistake, but to help ensure that the end user understands what caused the problem and will know how to prevent or address similar problems in the future, King says. Ideally, this approach will lead to fewer help desk calls or "at least a better informed and more capable workforce."

Peugeot Netherlands:

NO TICKET LEFT UNRESOLVED

The Netherlands branch of French automaker Peugeot supports 179 car dealerships throughout Europe and another 160 commercial users in the head office in Utrecht. The help desk employs 26 technicians and processes about 3,750 tickets per year, or about 72 each week, on average.

Richard Nolting, the help desk manager, says the company wanted to improve efficiencies. In 2010, the help desk was resolving almost 90% of support issues in 2.4 days on average, bettering a goal of 80% set by the standards body ISO, but Peugeot wanted to do even better.

The company also wanted more flexibility. Nolting says some help desk systems are overly 'canned,' with automatic, robotic-sounding messages sent back to users. To make the communication more personalized, Peugeot needed more features. For example, Nolting says, he wanted a system that lets technicians send SMS alerts to users so IT staffers can communicate from wherever they happen to be in the building. Other goals included building a knowledge base of support calls and allowing users to create their own personalized tickets.

The company started using Kayako, a collaborative help desk program. Nolting says a key feature is the ability for every agent to access all support-related emails. When agents create a ticket, they enter a user profile. Agents can then click an option to start a voice-over-IP call, engage in live chat, or begin a screen-sharing session.

While other help-desk tools might allow these activities, Nolting says, they are more ad hoc and not necessarily recorded as part of the support call. Tracking is important to him, because it helps his organization avoid having to manually sort and manage tickets.

> **MOST CORPORATE HELP DESKS ARE OUTDATED.**
>
> **JAROD GREENE,** GARTNER ANALYST

"We made extensive use of Kayako's mail parser rules, workflows and smart filters," Nolting says, explaining how tickets can be automatically assigned to specific managers and tracked accordingly. Over the past year, he says, support calls have improved to a same-day resolution average of around 94%. And the total time to resolve support issues changed to 1.8 days on average, down from 2.4 days.

Tracking all tickets is immensely helpful in the long term, says Greene. "Only well-documented processes can be transformed into structured workflows. So if the data is not captured in ticketing tools, it will be hard to find and re-use should the [same] issues ever arise again." Tools like Kayako "keep out-of-band conversations from going into the garbage, and let IT operations groups and administrative teams better understand work patterns in support of processes," he says.

Peugeot is using Kayako both to simplify the query process and as a tracking and auditing tool, says Pund-IT's King. "This should help increase the efficiency of help desk processes, but it also creates records to fulfill internal auditing processes," he says. Another potential benefit: Search and analytics could be applied to gain insight into recurring problems or employee and dealership usage patterns.

De Beers Canada:

THE PAPERLESS HELP DESK

De Beers Canada, the mining arm of a company probably best-known in the U.S. for its high-end jewelry stores, has found a way to make the help desk entirely paperless. With two remote mines of about 400 employees each, and headquarters in Toronto with about 100 employees, the company wanted to streamline operations. One goal was to reduce the number of help desk tickets.

James Ross, corporate IT manager for the help desk, says the company has reduced tickets from 700 per month to about 500. One method for streamlining: Tickets are grouped according to incidents, so technicians can address the root cause and prevent more calls about the same problems. They achieved this by monitoring help desk tickets and predicting problems rather than waiting for things to happen.

For example, they used to be surprised by requests for new hardware or business software. But now help desk staffers can see patterns from the same department, around the same time of year, and can be better prepared for those requests if, say, bandwidth is a problem.

De Beers uses ManageEngine's Service Desk Plus to group tickets, send SMS alerts to IT staffers, and record electronic signatures for all tickets. Although the company does not use the mobile version of the app today, it plans to add that capability.

Ross says a key new feature is that all help desk activities are audited and can be monitored remotely, which is helpful for workers in Toronto trying to solve problems at the mines. This remote monitoring used to be an ad hoc, manual process.

The reporting has an added benefit beyond auditing requirements: Understanding root causes.

"Most organizations can't perform trend analysis on tickets — they just react to them as they occur," says Ross, who adds that the company also uses the help desk for facility-related requests, such as building repairs or HVAC upgrades, and may start using it for human resources activities such as processing new hires and departmental changes. The company's help desk system requires staffers to log calls and track tickets, and there's no reason the same software can't be applied to monitor other types of activities.

"De Beers is following a path similar to Peugeot's, though it seems a bit more structured on the front end — e.g., proactive grouping linked to root causes," says Pund-IT's King. "Running the process remotely should also allow the company to manage and support widely dispersed facilities and workers, or to consider engaging a third party to operate the [help desk] service at some future point."

In each of these examples, one thing is clear: The help desk is more than a place to call for help. Organizations are using support tools to teach users to solve their own problems, generate detailed reports that help identify root causes, and comply with complex auditing requirements by tracking and monitoring all calls.

While the basic idea of keeping employees productive is a driver, improving overall processes in the company can be a major secondary benefit when the help desk gets the latest tools. ◆

Brandon *is a former IT manager at a Fortune 100 company who now writes about technology. He has written more than 2,500 articles in the past 10 years. You can follow him on Twitter (@jmbrandonbb).*

LET'S STOP
COMPROMISING
MOBILE SECURITY FOR
MOBILE DIVERSITY.
INTRODUCING BLACKBERRY MOBILE FUSION.
Now all personal and corporate-owned BlackBerry,® iOS and Android devices can seamlessly access business data and applications on a single, secure management platform. To find out how this new approach will end mobile chaos, visit blackberry.com/mobilefusion
BlackBerry
Be Bold

© 2012 Research In Motion Limited. All rights reserved. BlackBerry®, RIM®, Research In Motion® and related trademarks, names and logos are the property of Research In Motion Limited and are registered and/or used in the U.S. and countries around the world. All other trademarks are the property of their respective owners.

The company started using Kayako, a collaborative help desk program. Nolting says a key feature is the ability for every agent to access all support-related emails. When agents create a ticket, they enter a user profile. Agents can then click an option to start a voice-over-IP call, engage in live chat, or begin a screen-sharing session.

While other help-desk tools might allow these activities, Nolting says, they are more ad hoc and not necessarily recorded as part of the support call. Tracking is important to him, because it helps his organization avoid having to manually sort and manage tickets.

> **MOST CORPORATE HELP DESKS ARE OUTDATED.**
>
> **JAROD GREENE,** GARTNER ANALYST

"We made extensive use of Kayako's mail parser rules, workflows and smart filters," Nolting says, explaining how tickets can be automatically assigned to specific managers and tracked accordingly. Over the past year, he says, support calls have improved to a same-day resolution average of around 94%. And the total time to resolve support issues changed to 1.8 days on average, down from 2.4 days.

Tracking all tickets is immensely helpful in the long term, says Greene. "Only well-documented processes can be transformed into structured workflows. So if the data is not captured in ticketing tools, it will be hard to find and re-use should the [same] issues ever arise again." Tools like Kayako "keep out-of-band conversations from going into the garbage, and let IT operations groups and administrative teams better understand work patterns in support of processes," he says.

Peugeot is using Kayako both to simplify the query process and as a tracking and auditing tool, says Pund-IT's King. "This should help increase the efficiency of help desk processes, but it also creates records to fulfill internal auditing processes," he says. Another potential benefit: Search and analytics could be applied to gain insight into recurring problems or employee and dealership usage patterns.

De Beers Canada:

THE PAPERLESS HELP DESK

De Beers Canada, the mining arm of a company probably best-known in the U.S. for its high-end jewelry stores, has found a way to make the help desk entirely paperless. With two remote mines of about 400 employees each, and headquarters in Toronto with about 100 employees, the company wanted to streamline operations. One goal was to reduce the number of help desk tickets.

James Ross, corporate IT manager for the help desk, says the company has reduced tickets from 700 per month to about 500. One method for streamlining: Tickets are grouped according to incidents, so technicians can address the root cause and prevent more calls about the same problems. They achieved this by monitoring help desk tickets and predicting problems rather than waiting for things to happen.

For example, they used to be surprised by requests for new hardware or business software. But now help desk staffers can see patterns from the same department, around the same time of year, and can be better prepared for those requests if, say, bandwidth is a problem.

De Beers uses ManageEngine's Service Desk Plus to group tickets, send SMS alerts to IT staffers, and record electronic signatures for all tickets. Although the company does not use the mobile version of the app today, it plans to add that capability.

Ross says a key new feature is that all help desk activities are audited and can be monitored remotely, which is helpful for workers in Toronto trying to solve problems at the mines. This remote monitoring used to be an ad hoc, manual process.

The reporting has an added benefit beyond auditing requirements: Understanding root causes.

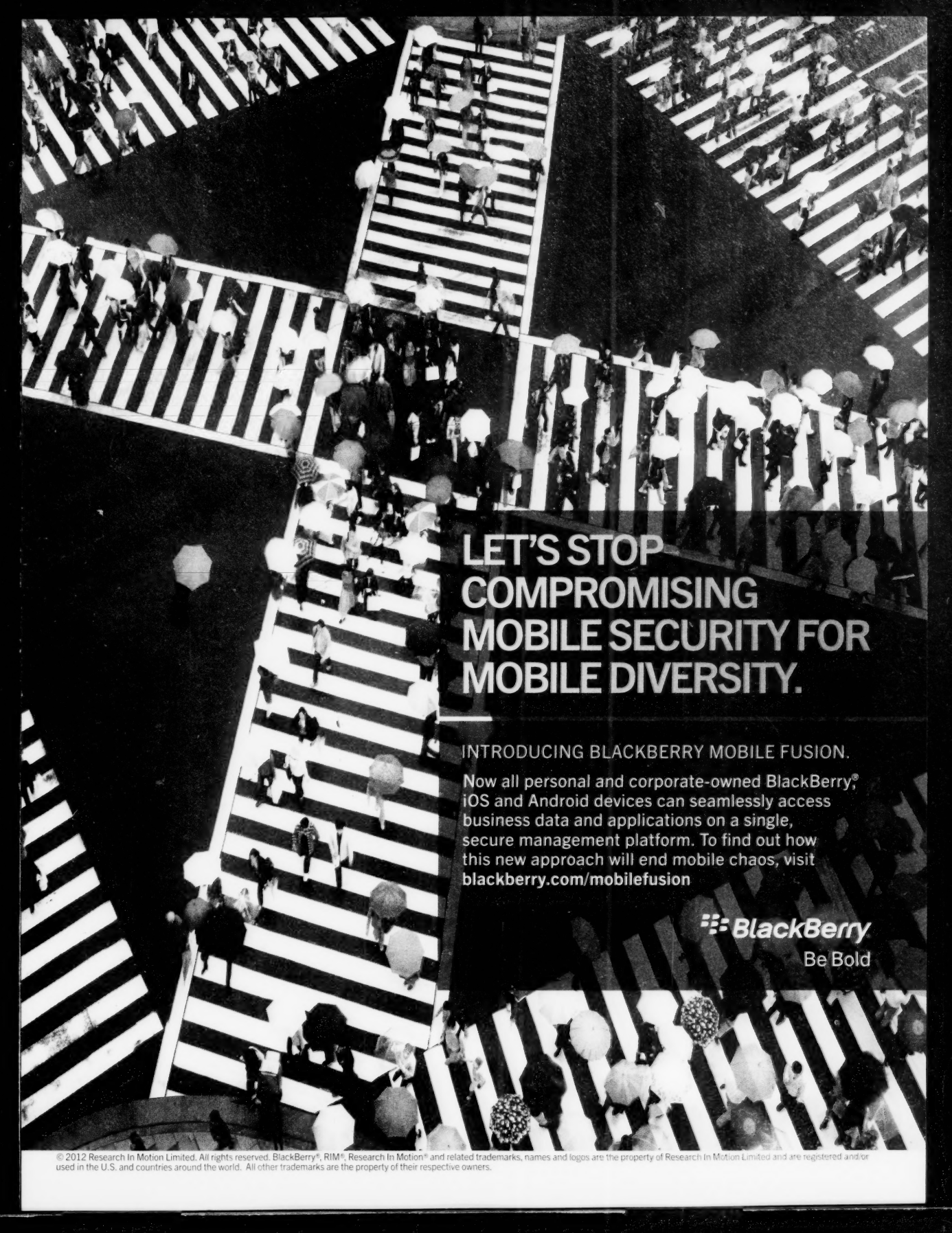
"Most organizations can't perform trend analysis on tickets — they just react to them as they occur," says Ross, who adds that the company also uses the help desk for facility-related requests, such as building repairs or HVAC upgrades, and may start using it for human resources activities such as processing new hires and departmental changes. The company's help desk system requires staffers to log calls and track tickets, and there's no reason the same software can't be applied to monitor other types of activities.

"De Beers is following a path similar to Peugeot's, though it seems a bit more structured on the front end — e.g., proactive grouping linked to root causes," says Pund-IT's King. "Running the process remotely should also allow the company to manage and support widely dispersed facilities and workers, or to consider engaging a third party to operate the [help desk] service at some future point."

In each of these examples, one thing is clear: The help desk is more than a place to call for help. Organizations are using support tools to teach users to solve their own problems, generate detailed reports that help identify root causes, and comply with complex auditing requirements by tracking and monitoring all calls.

While the basic idea of keeping employees productive is a driver, improving overall processes in the company can be a major secondary benefit when the help desk gets the latest tools. ◆

Brandon *is a former IT manager at a Fortune 100 company who now writes about technology. He has written more than 2,500 articles in the past 10 years. You can follow him on Twitter (@jmbrandonbb).*



© 2012 Research In Motion Limited. All rights reserved. BlackBerry®, RIM®, Research In Motion® and related trademarks, names and logos are the property of Research In Motion Limited and are registered and/or used in the U.S. and countries around the world. All other trademarks are the property of their respective owners.

Security Manager's Journal

MATHIAS THURMAN

Who's Got Your Mail?

When a chance discovery reveals that anyone can access an executive's email, the brainstorming begins.

I'M ALWAYS AMAZED by the various ways that security deficiencies find their way to the top of the ocean — you know, that ocean we're all trying to boil.

Last week, one of the managers in our sales department discovered a security lapse by chance. He had terminated one of his sales associates and wanted to review that person's email for correspondence related to outstanding sales deals. We give such managers access to their reports' Exchange mail for just this sort of situation.

The manager was typing in the person's name, and it auto-filled before he could finish. So he clicked OK and started looking around. But hold on — the inbox seemed to belong to one of our executives, not the terminated sales associate. Auto-fill had provided the name of the executive, and the sales manager hadn't noticed. That wasn't a problem — but how was it that he had then been able to open the inbox?

Fortunately, the manager called the CIO to explain what had happened. Naturally, the CIO then called me.

I found out that the executive's email was configured to give any employee in the company access. Of course, we immediately dialed that back so that the executive's admin was the only person with access other than the executive herself. Then I called together my incident response team: one of my security analysts, the lead Exchange administrator, the manager of the help desk and a few other IT folks. We began investigating and brainstorming likely scenarios.

First, we checked logs to see who had configured access for that inbox and who had accessed it — or we set out to do that, but there were no logs enabled for either the executive's desktop or the Exchange server. Seems we hadn't enabled these types of logs because they consume a lot of disk space and cause performance issues.

JOIN IN the discussions about security! **computerworld.com/blogs/security**

I then had my security analyst search our security incident and event management (SIEM) tool for any sign that the executive's PC had been afflicted by malware. I also had him ensure that no resident malware was running on it.

Next, I reviewed help desk tickets. Sure enough, a ticket had been opened about four months earlier to configure access to the executive's calendar. The technician who had completed the ticket assured me that he had delegated access only to the executive's admin.

I wondered whether other users' inboxes might be similarly exposed, so I had one of the Exchange administrators generate a report to tell us if any mailboxes were configured for global access. Sure enough, several more executives had improperly configured mailboxes, along with about 40 other employees.

Interestingly, the help desk tickets showed that the same technician who had been responsible for the original executive's Exchange configuration had also configured the delegated access for the other executives with wide-open inboxes. Logic suggested we had found the root of the problem.

The technician's manager and I decided to hold a training session for the help desk on the proper configuration of delegated access to Exchange inboxes. And who better to conduct this training, we figured, than the very help desk technician who seemed to have been doing things wrong. No finger-pointing, but this approach should ensure that the person most in need of the training really got the lesson.

We are also working to make logging possible on the Exchange server and to direct the logs to our SIEM tool. And we are investigating ways to keep people from enabling delegated access without first opening a help desk ticket. If that doesn't work, we'll have to ensure all employees are trained on the proper use of this configuration.

And now I have an additional audit to add to my list of regular activities. ◆

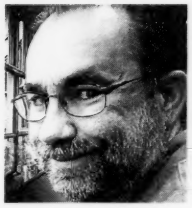
This week's journal is written by a real security manager, **"Mathias Thurman,"** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

"More executives had improperly configured mailboxes — as did about 40 other employees.

Trouble Ticket

» **At issue:** Anyone can open an executive's Exchange mailbox.

» **Action plan:** Find out how that happened, see if it's widespread, and lock it all down.



S.J. VAUGHAN-NICHOLS

Facebook + Instagram = One Big Acquisition Flop

When you boil it all down, Facebook is spending $1B for some Web 2.0 software.

I KNOW, I KNOW. Facebook's acquisition of Instagram hasn't even been finalized yet and I'm already calling it a complete waste of a billion dollars. How can I say that? Easy.

Let's look at the facts, shall we? Facebook paid about $28 for each of Instagram's 35 million users. As such things go, that doesn't seem so bad — as long as Instagram's users stick around. But the reality is that faithful fans of the photo-sharing program are royally ticked off by the deal. Those who are frantic to get their pictures out of Instagram before Facebook takes over may well be wary of Facebook's lousy privacy record. If you don't want your Instagram photos used in Facebook ads, you'd better make sure you have your privacy settings adjusted properly — and then hope Facebook doesn't change its privacy settings yet again.

Moreover, $28 per user is cheap only if Instagram's users aren't already Facebook users. In its pre-IPO S1, Facebook claims it has 845 million active monthly users. I strongly suspect that there's a good deal of overlap between that 845 million and Instagram's 35 million.

So when you boil it all down, what Facebook has really bought is some Web 2.0 software for tweaking pictures. I haven't programmed in years, but I bet I could put together a team of developers, whip up an Instagram clone, and launch it on the Amazon Elastic Compute Cloud over a weekend. This is not rocket science.

Mind you, I'm not sure that Steven's Instagram would be worth even the six figures it would cost to build. Today, Instagram's cutesie photo filters are popular — but they generate no revenue. Tomorrow, they could be as passé as Pet Rocks.

Here's what will happen: Facebook won't see a noticeable increase in users. And Instagram fans who loathe the idea of Facebook getting its hands on their images will move to another platform.

What the heck, though. Mark Zuckerberg is still mostly playing with fantasy dollars, and if he wants to waste a billion of them on Instagram, he doesn't have stockholders to answer to — yet.

And, as dumb as this move was, it's not even close to such winners as these:

5. News Corp. buying MySpace for $580 million in 2005. It finally managed to dump the social network for less than a dime on the dollar in 2011.

4. Microsoft grabbing digital marketing services agency aQuantive for $6 billion. You might not remember this one, which would be fine by Microsoft. In trying to play catch-up, it paid about twice what Google had paid for DoubleClick, and got much less in return.

3. Oracle acquiring Sun for $7.4 billion. Larry Ellison claimed that he bought it for Java and Solaris. How's that working out for you, Larry?

2. Yahoo paying a combined $9 billion-plus for Broadcast and GeoCities. Yahoo is *still* paying the price for these two badly thought-out 1999 acquisitions. Those errors in judgment seem to be the most comparable to Zuckerberg's mistake.

1. Time Warner combining with AOL. For sheer dot-com insanity, you can't beat this deal. A better use of the $350 billion might have been to fuel electrical plants with dollar bills.

But seriously, these examples represent the good news for Zuckerberg when it comes to the Instagram deal: It's not the worst tech acquisition ever made. ◆

Steven J. Vaughan-Nichols has been writing about technology and the business of technology since CP/M-80 was cutting-edge and 300bps was a fast Internet connection — and we liked it! He can be reached at sjvn@vna1.com.

Career Watch

FOTOLIA / MAXFX

What Is Working Remotely Worth to You?

Respondents to a survey were asked what they would give up for the opportunity to work remotely.

78%	would forgo free meals in the workplace
54%	would give up their employer-paid cellphone plan
31%	would accept a reduction in paid vacation
25%	would take a salary reduction

Note: Multiple responses allowed.

SOURCE: ONLINE SURVEY (1,074 RESPONDENTS) CONDUCTED BY PROJECT MANAGEMENT AND COLLABORATION VENDOR WRIKE, DECEMBER 2011

Silicon Valley Tops in Tech Pay

Here are the top-paying U.S. cities for tech jobs.

1	San Jose	$119,412
2	San Francisco	$112,739
3	New York	$105,192
4	Washington	$99,618
5	Boston	$99,099
6	Los Angeles	$96,705
7	Brooklyn	$96,696
8	Philadelphia	$95,929
9	Chicago	$94,899
10	Dallas	$94,799

SOURCE: CYBERCODERS SURVEY OF 3,000 TECH JOBS AND SALARIES, 2012

Q&A

Roy Cohen

The career coach and author of The Wall Street Professional's Survival Guide *talks about handling a* **request for your Facebook password** *in a job interview.*

Can a person simply refuse a request to hand over his Facebook password? Yes. No one is required by law to provide a Facebook password. But there is always a consequence for any decision we make. In this case, if you refuse, you may be eliminated as a candidate.

It is possible that the company is testing you and your good judgment. If the position you are interviewing for requires the ability to negotiate unreasonable terms and conditions, then not providing the information requested may be the desired response. In that case, saying no with grace and tact may be viewed as an asset rather than a liability. Before you jump to any conclusion, ask about the request. Although the question may initially appear to be unreasonable, it may be that there is a legitimate reason to ask it.

Some people who have been out of work for several months might not feel that just walking away is an option. What can they do? Saying no is not the only option. Offering partial information and an explanation may satisfy the interviewer. The real question is how much the interviewer needs to know.

If you really believe that a line may have been crossed but you don't want to jeopardize your candidacy, the "Yes, but…" response is an option. In this case, you express a willingness to provide access, but at the same time you request an explanation. Sometimes the interviewer's intentions are harmless. It may be that the interviewer is uninformed – it could be cultural – and doesn't know any better. You may have to explain that he's welcome to have access to your public information but that there are sections of the site restricted to friends and family for obvious reasons.

Are such requests getting more common, or have there been only isolated incidents? In this market where a lot is riding on making a perfect hiring decision – i.e., one where virtually all candidate risk has been eliminated – it is easy to understand why a company would make every effort to learn as much as possible about a potential candidate before making a commitment. Questions that are commonly viewed as illegal – those involving age, race, religion, political affiliation, etc. – are considered inappropriate, but they do get asked occasionally. When they are raised, it is usually by uninformed interviewers or those from cultures where requesting this sort of information is standard practice. The rest of us have been socialized to know to never ask them.

So it is easy to understand why and how an interviewer might request confidential information like a password that should have no bearing on a candidate's potential to be successful. The precedent for asking has already been set by illegal questions. Fortunately, just like illegal questions, the negative publicity has been so immediate and so strong that these sorts of requests will be the exception rather than the rule.

– JAMIE ECKLE

dtSearch®

The Smart Choice for Text Retrieval® since 1991

Instantly Search Terabytes of Text

- 25+ fielded and full-text federated search options
- dtSearch's own file parsers highlight hits in popular file and email types
- Spider supports static and dynamic data
- APIs for .NET, Java, C++, SQL, etc.
- Win / Linux (64-bit and 32-bit)

Ask about fully-functional evaluations!

www.dtSearch.com 1-800-IT-FINDS

"lightning fast" Redmond Magazine

"covers all data sources" eWeek

"results in less than a second" InfoWorld

hundreds more reviews and developer case studies at www.dtsearch.com

- Desktop with Spider
- Network with Spider
- Publish (portable media)
- Web with Spider
- Engine for Win & .NET
- Engine for Linux

Personalized IT newsletters from Tech Dispenser.

You pick the topics. You pick the sources. You pick the frequency.

Build your own newsletter featuring your favorite technology topics — cloud computing, application development, security — over 200 timely topics, from more than 700 trusted sources.

Get started today. It's free.
www.techdispenser.com

TECH DISPENSER

Disturbingly personal newsletters

With 100+ branch offices located across the US, Experis US, Inc., is actively recruiting for the following positions.
Web Developers – metro Raleigh, NC – Code #RA110
Software Developers – metro Chesterfield, MO – Code #CF100
Database Architects – Atlanta, GA – Code #AT140
Vendavo Business Analysts – Austin, TX #AU140

Roving employment to varying jobsites throughout the US. Please refer to appropriate job code when submitting resume to: Experis US, Inc., Attn. Sally Warkaske, 100 Manpower Place, Milwaukee, WI 53212 or swarkaske.resumes@experis.com. EOE/MF/DV.

Sr. Software Engineers. Participate in all phases of SDLC. Req'mt mangmt, estimation, sys analysis & L3 prod support. Dev/maintain applns in legacy mainframe w/distributed web applns & related technologies such as JCL, COBOL, CICS, DB2, Stored Procs, SAS, REXX, IBM Web Sphere MQ channels, J2EE, VBA Macro's, Oracle, .Net; Req BS or forgn equiv in CS, CE or rel w/3-5 yrs exper in job offered or related technical/analytical role. Multiple positions. Job loc: Annapolis, MD & unanticipated client sites. May require travel/reloc. Mail resumes to Vedasoft, Inc,801 Compass Way, Suite 218, Annapolis, MD 21401. EOE.

ECM Business Consultants. Business reqimt, design specs, effort estimates to automate bus processes using Livelink, Records mngmnt & other related modules. Reqs BS or foreign equiv in MIS,CS,CE or rel w/5 yrs exp. Exper can be in job offered or related technical/analytical role. Multiple positions. Job location: NO VA & unanticipated client sites. May require travel. Mail resume to IMC, 11480 Commerce Park Dr, Reston, VA 20191. EOE.

Looking for something new?

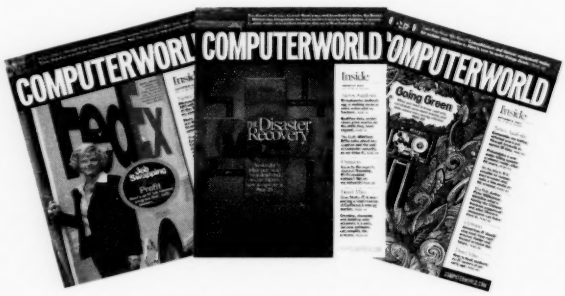
You've come to the right place!

Check back with us weekly for fresh listings placed by top companies looking for skilled professionals like you!

IT|careers

COMPUTERWORLD

Law Firms
IT Consultants
Staffing Agencies



Place your Labor Certification Ads Here

Are you frequently placing legal or immigration advertisements?

Let us help you put together a cost-effective program that will make this time-consuming task a little easier.

Contact us at:

800.762.2977

IT|careers

SHARK TANK

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

HAL MAYFORTH

Power-Sharing Arrangement

The boss needs a power supply for his PC's speakers — and unfortunately for this pilot fish, there aren't any to spare. "So I 'liberated' Mark's speaker power supply," says fish. "This happened when Mark was out of the office and I neglected to say anything. A couple of months later, Mark said, 'My sound doesn't work on my computer.' By the time I got to check it out, both Mark and Wayne were out of the office, so I borrowed Wayne's power supply and connected it to Mark's speakers. Another few months went by, and Wayne told me, 'The sound doesn't work on my computer.' So I swapped the power supply back from Mark's PC. I continued this for almost a year, until Wayne retired."

Impossible, Huh?

It's 5 a.m. when this IT pilot fish gets a call from the data center: The system drives have lost half their power supply. "As everything has redundant power supply, I notify the boss and say I'll have the vendor in at 8 a.m.," fish says. "The boss, vendor rep, facilities manager and I all meet at 8 a.m. to investigate what has happened. After I pull a few tiles, it's apparent that the twist-lock plug was yanked out of the socket when new cables were run under the floor. The facilities manager says, 'It's not possible for the cables to yank the plugs out,' and proceeds to grab one of the plugs and shake it. Unfortunately, it was the other half of the power supply, and it, too, had been loosened by the cable pulls. It fell out, bringing down the system completely. After that, the facilities people were told to keep their hands off the hardware and let the vendors make the mistakes."

Where'd He Go?

It's 4:00 p.m. on a Friday when this small IT group starts its HR software upgrade, with conference-call help from an analyst provided by the vendor. It looks like things are going fine, so 10 minutes into the process the analyst explains he has to drop off the call briefly for a meeting with his supervisor. "At 4:30, his supervisor called me," reports a pilot fish on the team. "He informed us that our analyst was 'no longer with the company.' I asked who would be working on our conversion. He said, 'We will have to assign someone to that early next week.' My response: 'But the conversion is running *now*!' " Supervisor promises to find someone immediately, but fish can do the time-zone math — the vendor's staff has left for the weekend. "The conversion did error out, and the vendor didn't assign anyone until Monday," sighs fish. "We now, only half jokingly, ask every vendor's analyst if there is any possibility his employment might be cut short for performance reasons."

» **Stick with Sharky!** Send your true tale of IT life to sharky@computerworld.com. You'll score a sharp Shark shirt if I use it.

CHECK OUT Sharky's blog, browse the Sharkives and sign up for home delivery at **computerworld.com/sharky**.

ADVERTISERS INDEX

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

APC 11
AT&T 13
Box 23
Brocade EVP 2
Brocade 3
CenturyLink Business 9
Cisco 27
CommVault C3
dtSearch 37
Hewlett-Packard C4
IBM Non-Intel C2, 7
InterSystems 5
iPage 17
Microsoft Cloud 15
Research in Motion 33
Verizon Wireless 25
VMWare 29

BPA WORLDWIDE

Periodical postage paid at Framingham, Mass., and other mailing offices. Posted under Canadian International Publication agreement PM40063731. **CANADIAN POSTMASTER:** Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A 7C9. Computerworld (ISSN 0010-4841) is published twice monthly except for the month of July by Computerworld Inc., 492 Old Connecticut Path, Box 9171, Framingham, Mass. 01701-9171.

Copyright 2011 by Computerworld Inc. All rights reserved.

Computerworld can be purchased on microfilm and microfiche through University Microfilms Inc., 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Computerworld is indexed. Back issues, if available, may be purchased from the circulation department.

Photocopy rights: permission to photocopy for internal or personal use is granted by Computerworld Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $3 per copy of the article, plus 50 cents per page, is paid directly to Copyright Clearance Center, 27 Congress St., Salem, Mass. 01970. Reprints (minimum 500 copies) and permission to reprint may be purchased from The YGS Group, (800) 290-5460, Ext. 100. Email: computerworld@theygsgroup.com. Requests for missing issues will be honored only if received within 60 days of issue date.

Subscription rates: $5 per copy; Annual subscription rates: — $129; Canada — $129; Central & So. America — $250; Europe — $295; all other countries — $295; digital subscription — $29. Subscriptions call toll-free (888) 559-7327. **POSTMASTER:** Send Form 3579 (Change of Address) to Computerworld, PO Box 3500, Northbrook, Ill. 60065-3500.

OPINION

SCOT FINNIE

Playing the Wrong Hand With Windows 8

Microsoft is gambling its reputation with its upcoming operating system.

THE PC IS DEFINITELY NOT DEAD FOR MICROSOFT (and it won't be for a long, long time), but Windows 8 might hasten its decline.

On a tablet that properly supports Windows 8, the beta version of the operating system shows the careful thought that Microsoft put into its design. It supports more elaborate gestures than other tablet operating systems. There's also a cool sidebar feature that lets you work on two apps at the same time. Some of the apps that Microsoft is creating for Windows 8 are a little too simplistic for my taste, and the library of third-party Windows Phone 7/8 apps has a long way to go, but I'm impressed with the design of Windows 8 on tablets.

But with Windows 8, the medium is the message. Put the same Consumer Preview of Windows 8 on a desktop PC and the experience takes a step backward from Windows 7. It looks like the baby blocks of operating systems. Placing the Start button in a cloak of invisibility isn't a smart move. It shouldn't be difficult for Microsoft to display the Start button on desktops while not displaying it on tablets; I hope the company rectifies that before launch. Why relegate 17 years of common desktop user experience to the trash can? It's reminiscent of the Ribbon in Microsoft Office.

Will Windows 8 be successful on the desktop? Of course. People like to snicker about Windows Vista, but according to Net Applications, Vista has a larger market share (about 7%) than the combined share of the two most widely used versions of OS X, Lion and Snow Leopard. With the huge installed base and OEM support that Windows has, Microsoft prints money with every operating system release.

Even so, Microsoft is gambling its reputation with Windows 8. The question is whether consumers will be happy with it; enterprise buyers have little incentive to upgrade over the short run. Many are quite happy with Windows 7. Think of how long XP lasted.

That means that for the next couple of years, Windows will be a tablet operating system that secondarily targets consumer PCs. Microsoft is playing catch-up again, this time in mobile computing, but no technology company plays that game better. It also manages its platform with ISVs, IHVs, OEMs and customers better than any other tech company. Nonetheless, on the desktop, Windows 8 is going to be a leap of faith that many may not take.

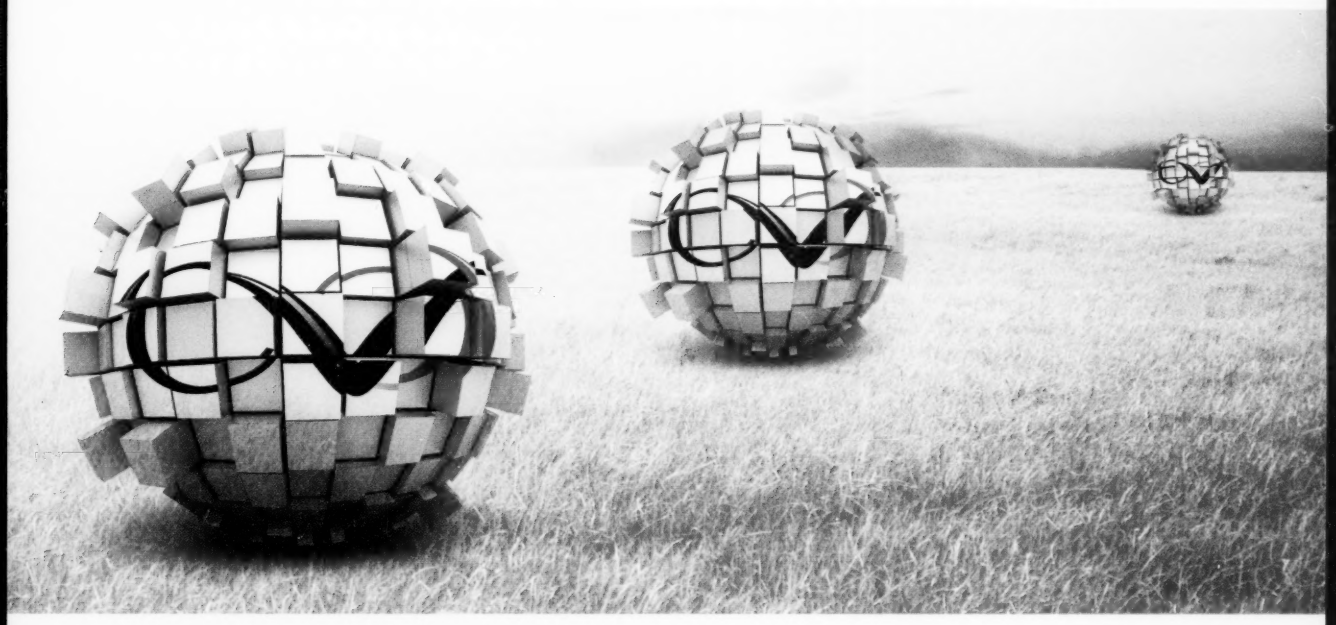
Here's why that should matter to Microsoft. Tablets are selling like hotcakes, right? Yes, but when you compare the tablet market and the PC market, the latter is quite a bit larger. Forrester says that two-thirds of the smartphones, tablets and PCs used in business are running some form of Windows. The vast majority of those are PCs. Although Forrester expects that figure to drop to 50% by 2016 as iOS and Android continue to rise, Microsoft can't afford to abandon its huge installed base of Windows PCs in its zeal to play catch-up on mobile.

Plus, Windows 8 tablets have a steep road to climb. An IDC report predicts that Windows Phone will have a 20% share of smartphone shipments in 2016. The same report predicts that iOS will also have 20% of the shipments and that Android will have 47%.

So Microsoft is going all in with Windows 8 in a tablet market it can't dominate, while putting its cash-cow desktop operating system business at risk. That doesn't seem like a winning hand. ◆

Scot Finnie is *Computerworld*'s editor in chief. You can contact him at sfinnie@computerworld.com and follow him on Twitter (@ScotFinnie).

Can your data management strategy keep up with massive data growth?



Don't back up. **Solve Forward.**

The only challenges greater than the ones IT leaders face today are the ones they'll face tomorrow. That reality is the guiding force behind CommVault's Solving Forward® approach to data and information management.

You may know us best as a backup company (we were positioned as an Enterprise Backup and Recovery "Leader" by Gartner after all). But our expertise and unique single-platform Simpana® software go way beyond backup.

CommVault delivers industry-leading solutions for the most vexing data management challenges you face today, and for those you will face tomorrow.

More than 15,000 customers that have helped make CommVault the world's fastest growing data storage software company trust us to help them protect and realize the untapped value of their data.

Isn't it time you found out why?

Visit commvault.com/ITLeaders

- Access Gartner's 2011 Magic Quadrant for Enterprise Disk-Based Backup and Recovery.
- Hear from current CommVault customers.
- Explore the innovations that will shape the modern data center at our Solve Forward 2012 virtual event.

Or call **888-746-3849.**

commvault®
solving forward™

©1999-2012 CommVault Systems, Inc. All rights reserved. CommVault, the "CV" logo, Solving Forward, and Simpana are trademarks of CommVault Systems, Inc. All other third party brands, products, service names, or registered service marks are the property of and used to identify the products or services of their respective owners.

All specifications are subject to change without notice.

REDEFINE

data center expectations with the power of convergence.

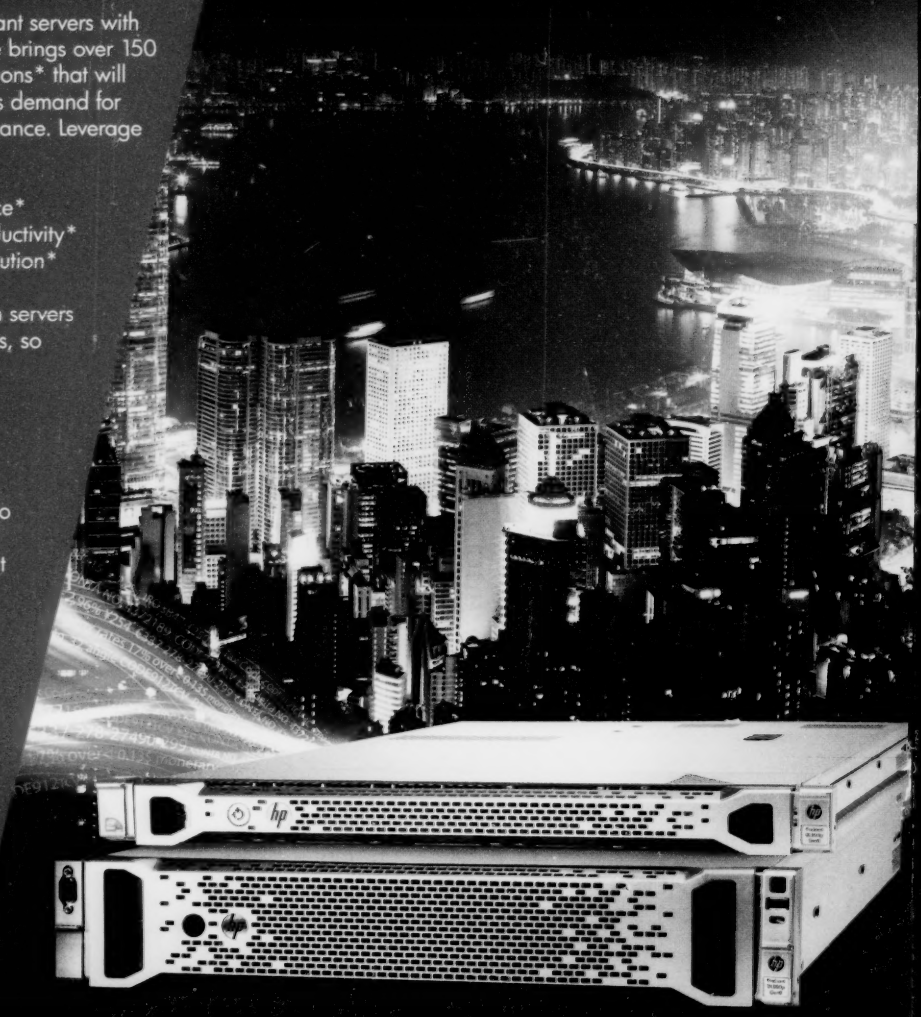
HP ProLiant Gen8—the world's most intelligent servers revolutionize IT so you're ready for what's next.

The next generation of HP ProLiant servers with HP ProActive Insight architecture brings over 150 groundbreaking design innovations* that will reshape how you meet relentless demand for new services and boost performance. Leverage breakthroughs like:

- 6X increased performance*
- 3X improved admin productivity*
- 66% faster problem resolution*

Only a 20-year global leader in servers could deliver intelligence like this, so you can turn IT innovation into business acceleration.

Watch the *Computerworld* video about HP ProLiant Gen8 server performance and productivity at **hp.com/go/rackCW** or scan the QR code below.



HP ProLiant DL360p Gen8 servers and HP ProLiant DL380p Gen8 servers powered by the Intel® Xeon® Processor E5-2600 Series

intel inside™ Xeon®

*For details on claim substantiations, visit **hp.com/go/rackCW**

© Copyright 2012 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice.

Intel, the Intel logo, Xeon, and Xeon Inside are trademarks or registered trademarks of Intel Corporation in the U.S. and/or other countries.